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Issue #8

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IFC's quarterly journal on public-private partnerships

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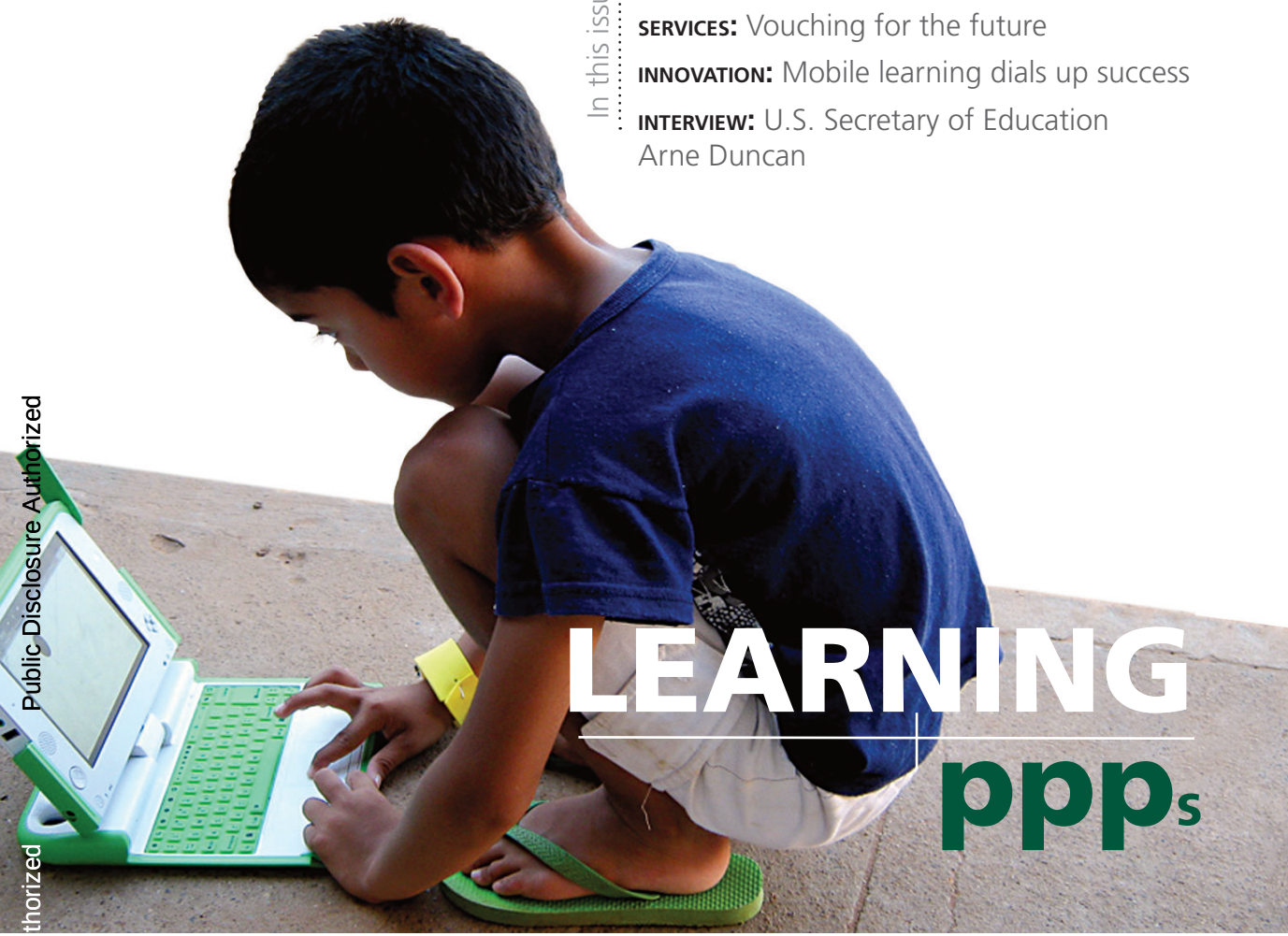
INFRASTRUCTURE: Education PPPs come of age

SERVICES: Vouching for the future

INNOVATION: Mobile learning dials up success

INTERVIEW: U.S. Secretary of Education Arne Duncan



LEARNING ppps

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Disclaimer

This journal was commissioned by IFC, a member of the World Bank Group, through its Advisory Services in Public-Private Partnerships department, which helps governments improve access to basic public services through public-private partnerships in infrastructure, health and education.

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Letter from IFC

"Disruptive technology," the term coined by Harvard Business School professor Clayton Christensen, is most successful in markets "where the alternative is nothing"—an apt description of the centuries-old education model. But just as advances in technology have launched a paradigm shift in learning, public-private partnerships (PPPs) in education have also transformed the learning landscape. These PPPs allow governments to ensure access to quality education while removing educators from the day to day burdens of managing services and maintaining a facility. The newest generation of partnerships reaches beyond infrastructure to deliver school choice via vouchers for poor students, low-cost private schools, and incentives for high-performing teachers.

Inspired by the possibilities of education PPPs, we decided to approach the world's leading thinkers in education—including U.S. Secretary of Education Arne Duncan, edX President Anant Agarawal, and former Washington, D.C. schools Chancellor Michelle Rhee—with big questions of our own. Their responses hint at a future in which even the poorest have access to education and the opportunities that inevitably follow, benefitting households as well as national economies. That's exactly the sort of "disruptive" approach that earns top marks in our book.

Laurence Carter, Director

Tanya Scobie Oliveira, Editor

IFC Advisory Services in Public-Private Partnerships

Photo © Richard Goerg/istockphoto

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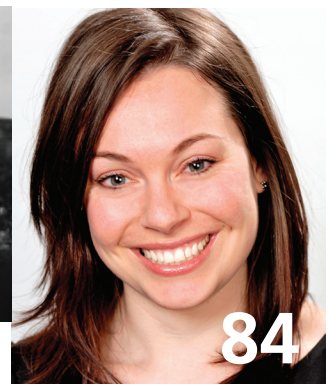
Arne Duncan

Marcello Faulhaber



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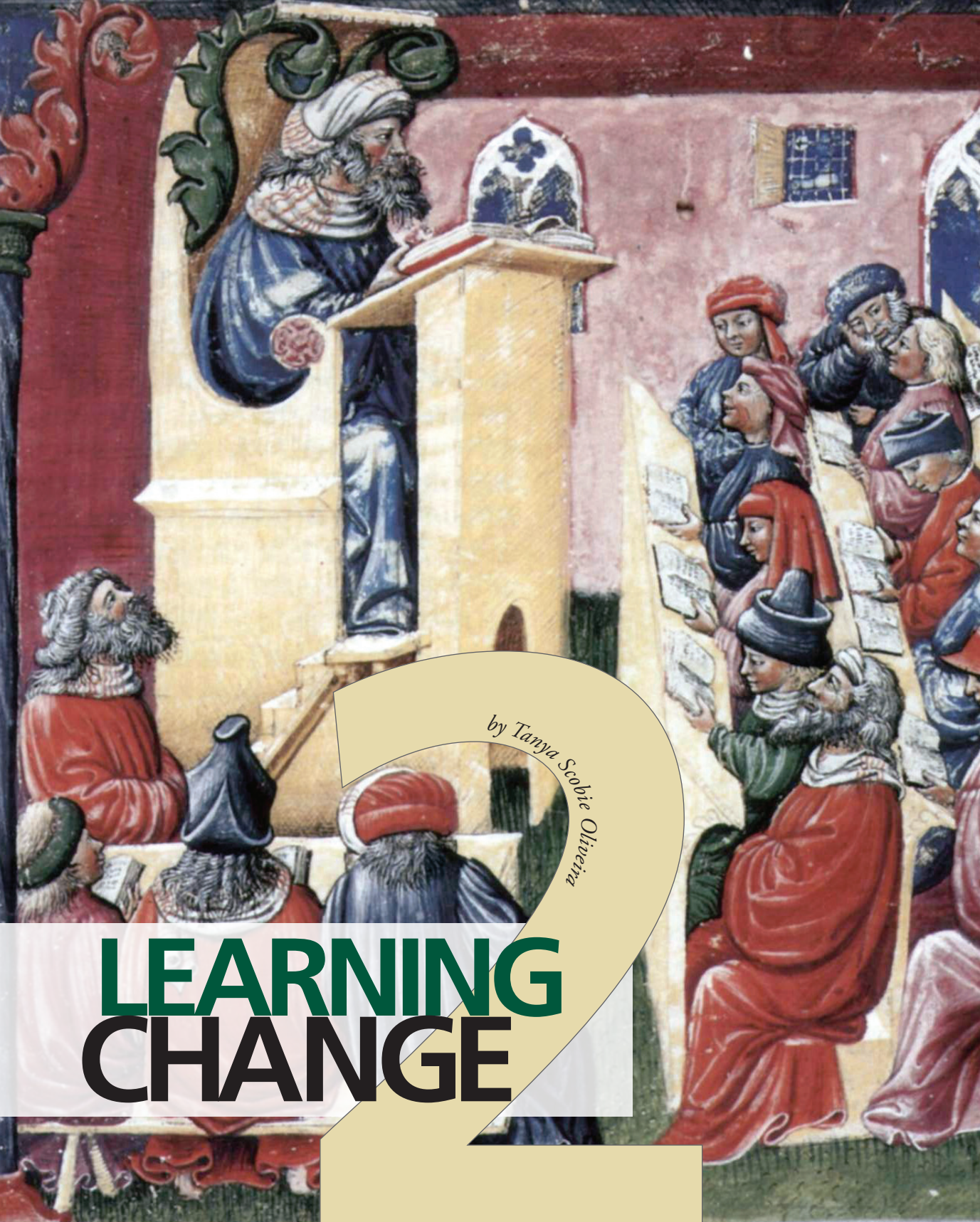


LEARNING CHANGE

by Tanya Scobie Oliveira

PERSPECTIVE

Think back to your first classroom. The desks were lined up in rows (or perhaps clustered, if your school was especially progressive), and a teacher holding a piece of dusty chalk stood at a blackboard, talking through a lesson and hoping for the best. Sound familiar? That's what my high school in Hamilton, New Zealand looked like in the 1980s. It's what my parents' school looked like in the (even) less-developed 1950s, and my grandparents' schools in the rural 1920s. As you can see from the painting at left, it's what fourteenth-century schools looked like in Bologna, Italy. And that's pretty much how my children still learn, in their urban Washington, D.C., schools in 2013.

The familiarity of this education model, static not just for generations but for centuries, may bring comfort to some, but leaves many more questioning why so little has changed. With all this sophisticated technology that's spurred paradigm shifts large and small, there's almost zero prog-

This illustration from a fourteenth-century manuscript shows Henry of Germany delivering a lecture to university students in Bologna.

Artist: Laurentius de Voltolina; Liber ethicorum des Henricus de Alemannia; Kupferstichkabinett SMPK, Berlin/Staatliche Museen

Preussiischer Kulturbesitz, Min. 1233

ress in the practice of what surely we can agree is the most important thing we do as a society: develop the minds and characters of our youngest citizens.

But if you pay attention, inspired educators, entrepreneurs, technologists, and others are hard at work. Their findings are beginning to alter how students learn as well as where that learning takes place. Change hasn't yet trickled down to most of our childrens' classrooms, but it's on the way.

Change hasn't yet trickled down to most of our childrens' classrooms, but it's on the way.

A PPPiece of the puzzle

Because technology has placed us at the cusp of such radical shifts in learning, the finance and administration of education delivery systems seem a little like bit players in an epic drama. But the sweep of history has stirred change here as well. Until recently, it was fairly widely believed that governments alone could and should ensure education for all, and could do so only if that education was wholly publicly delivered, owned, and financed. Most also felt that any private sector involvement in education must be regarded with suspicion lest it fleece the government, unsuspecting children, and their families. These fairly rigid views have relaxed in the past decade or so, and more and more countries are considering and implementing public-private partnerships (PPPs) for education—potentially a hugely beneficial balancing act where each side offers what it does best.

These partnerships got their start as education private finance initiatives (PFI*) in the United Kingdom—bundling the finance, construction, and facilities maintenance for the private sector—between about 2000 and 2010. This has grown strong globally, especially since 2005, and even continued to grow during the 2009 to 2010 global financial crisis, finally tapering off in 2011. But PFIs are often criticized as being as boring and basic as the ABCs. (In this issue John Kjorstad invokes Pink Floyd's dejected student in *The Wall* to make a similar point much more vividly.) After all, this type of PPP tackles "only" the school infrastructure, leaving out the question of uninspired (or even absent) teachers and unchallenged students.

School infrastructure, however, has an impact on learning, especially in developing countries where shoddy infrastructure, poorly maintained, negatively affects students' ability to learn. PFI-style, infrastructure-only PPPs relieve school management of the daily headaches of broken ceiling fans, overflowing toilets, or crumbling bricks. This lets teachers to focus on instruction and allows students to learn in more comfortable

** A term coined in the U.K. but now used to mean infrastructure-only PPPs.*

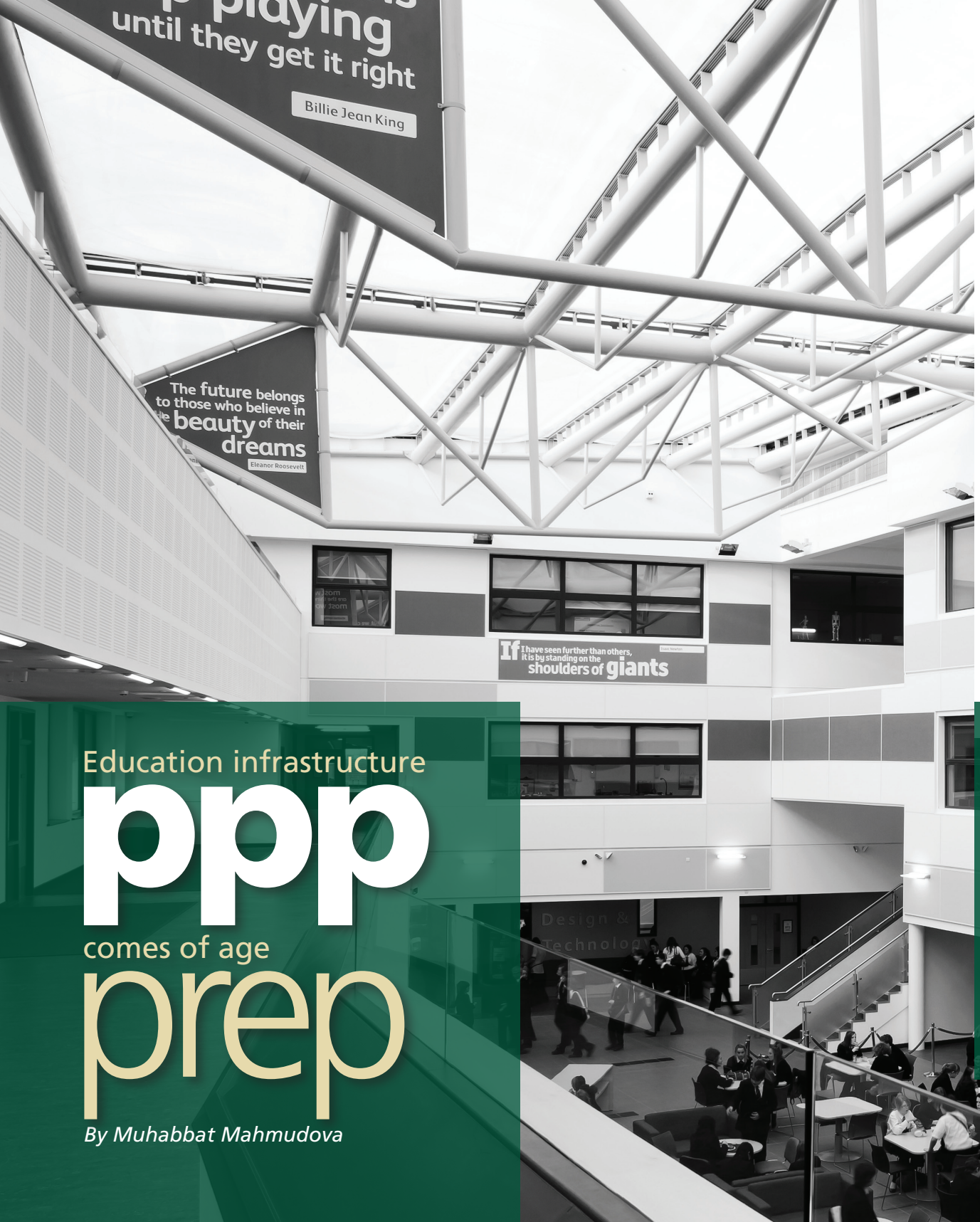
While PFIs continue to fill a need in many areas, and can be a politically pragmatic and palatable "starter" PPP, education partnerships are evolving into more comprehensive PPPs that take on the core problems in education: the quality of teachers, the management of teaching, and the teaching itself.

environments, while higher-level administrators can finally turn their limited attention to strategy and policy.

The next level

While PFIs continue to fill a need in many areas, and can be a politically pragmatic and palatable "starter" PPP, education partnerships are evolving into more comprehensive PPPs that take on the core problems in education: the quality of teachers, the management of teaching, and the teaching itself. Appropriately incentivizing the private sector to deliver education can introduce innovation, rigor, and efficiencies that can be very difficult to do in traditional public school environments with entrenched mindsets, bureaucracies, and policies.

Contributors to this issue report from the front lines of these experiments, which include charter schools and their offshoots, voucher programs, incentives for teachers, and new models in Brazil, India, Nigeria, and the Philippines. Each of these projects and partnerships, however small, paves the way for more learning, and facilitates expanded access to education as technology reaches into every pocket of the globe. The end result is a future in which classrooms, at long last, no longer resemble fourteenth-century paintings. 🕮



Education infrastructure

ppp comes of age prep

By Muhabbat Mahmudova

Between 2000 and 2010, global investment in education grew rapidly. Governments began to attract private capital to build and modernize school building infrastructure in the education sector. Global investment has been growing especially strongly since 2005, and even continued to grow during the 2009 to 2010 global financial crisis. The impact of the crisis on public finances and the availability of long-term debt did, however, ultimately have an impact. Activity decreased in a number of countries, and reflecting this, the total volume of investments started to wane during 2011 and 2012.

THE RISE OF PPPs

PPPs have been widely applied to the delivery of education facilities in the last 15 years. Under this approach, the governments pay private companies throughout the concession period for the construction, operation, and often the maintenance of education infrastructure facilities. The sheer number of education projects developed through PPPs argues that positive results can be achieved in well-structured education PPP projects as governments benefit from private sector expertise and rely on timely and efficient delivery of infrastructure, operation, and maintenance of the facility. PPPs opened an alternative way of

WHAT MAKES EDUCATION PPPs UNIQUE?

PPPs in education present a unique set of challenges that distinguish them from traditional infrastructure PPPs such as transport, telecommunications, energy, and water. They rely heavily on political support and imply greater interdependence between the government, which pays for the infrastructure, and the private sector, which delivers and manages it. Education infrastructure requires thorough preparation and assessment of facilities—including consideration of factors such as demographics, innovation in teaching, and technology changes—that ultimately creates a user-friendly environment for learning and development.

Photo © BSF in Hull / The Winifred Holtby School

delivering essential social infrastructure through the structures of these contracts.

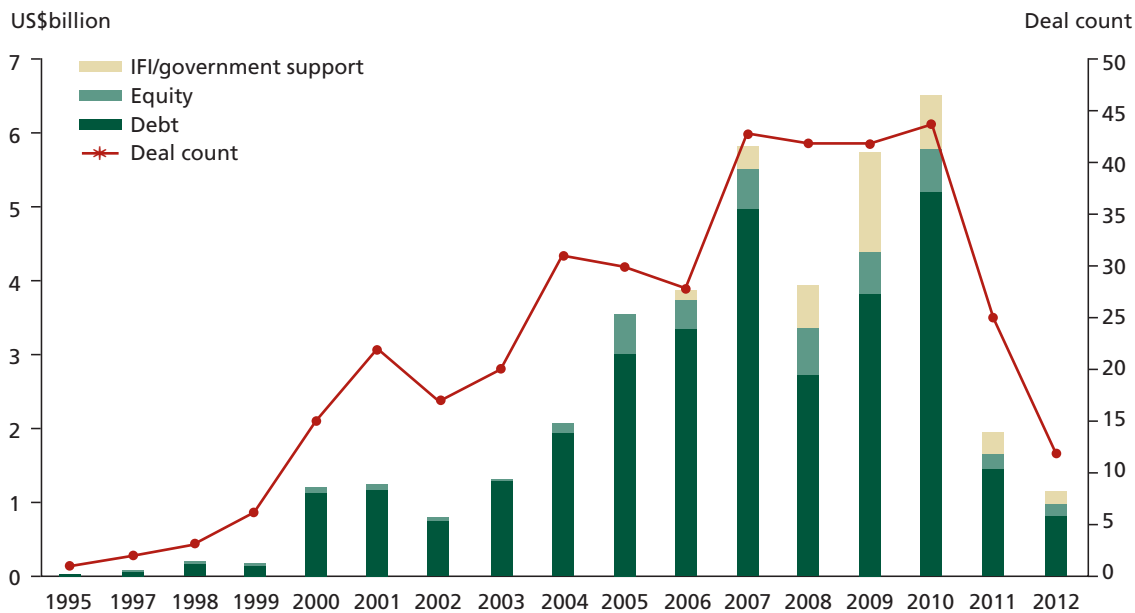
Although PPP use has increased considerably over the last 10 years, traditional procurement remains widely used as countries which promoted the use of PPPs, such as Australia, Canada, Germany, and the United Kingdom, continue to develop education projects through design and build contracts.

Looking ahead globally, as governments seek to apply the lessons learned from conventional PPP schemes in transport and other economic infrastructure, education PPPs are well-positioned to grow in importance.

The chart below shows the volume of global investments that went to finance education PPP projects from 1995 to 2012. A total of 383 projects have been recorded to reach financial close within this period, with a total value of around $40 billion.

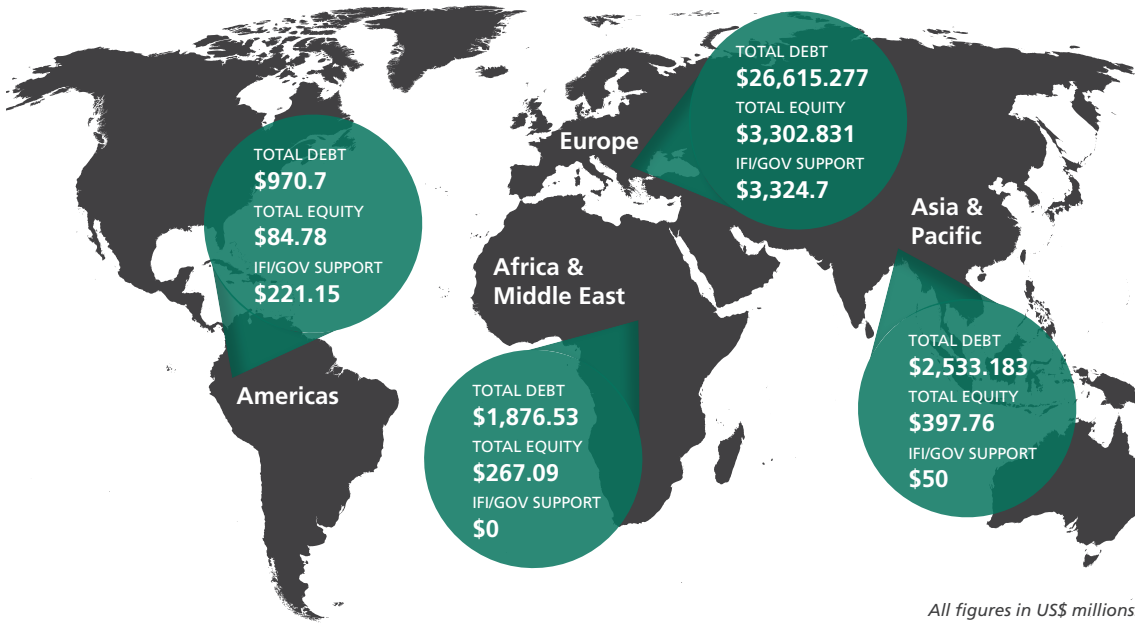
The market was the most active from 2007 to 2010, recording the highest level of investments in education. It is worth noting that the volumes in 2009 and 2010 were bolstered by two multibillion dollar projects in the United

Global investments in education, by sources of funding



Source: Infrastructure Journal

Regional investments, by source of funding (1995 to October 2012)



All figures in US$ millions.
Source: Infrastructure Journal

Arab Emirates and Belgium. Many education projects during this period (around 37 percent or 140 deals) were small projects with capital value below $50 million. There were 238 deals between $50 million and $500 million.

Among the five deals that had capital values above $500 million were three British schools: Glasgow Secondary Schools, Tower Hamlets BSF, and South Lancashire Schools PFI. In addition, there were two record high value deals: Zayed University in the United Arab Emirates (worth $1.2 billion) and the Flemish Schools PPP in Belgium (worth $2.8 billion).

WHO PAYS?

The education projects considered here have been financed primarily with the use of debt through project finance structures. This means that commercial banks have lent the bulk of the capital costs required for the construction of projects—usually around 80 percent of project costs. This has been a preferable way for the government to fund construction and modernization for quick and efficient delivery of educational facilities.

Debt levels fluctuated in 2008 at the onset of the global financial crisis, and the share and overall volume of debt financing fell dramatically

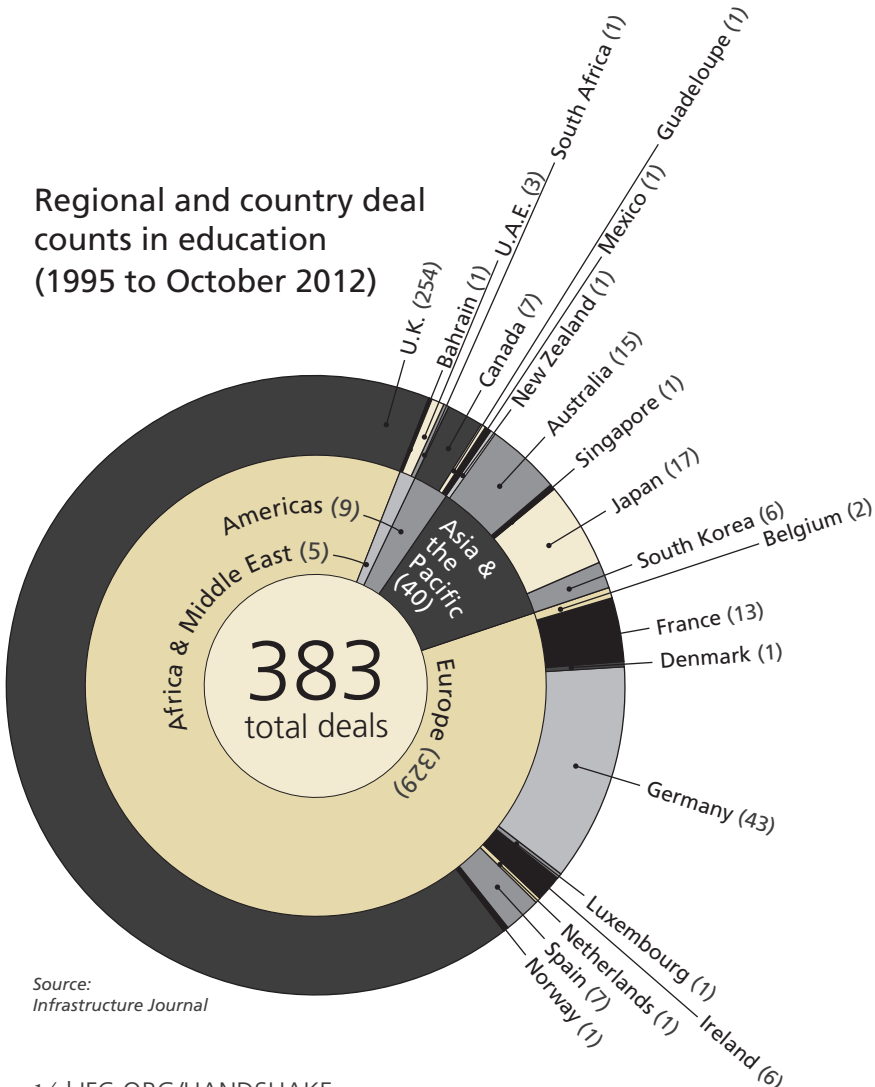
before rising again in 2009 and 2010 (thanks to the two aforementioned mega projects in the United Arab Emirates and Belgium). There was a considerable drop in 2011 with a further decline in 2012. Difficult economic conditions are partly the reason for the slowdown in activity, as it has become a challenge to commit public funds to projects in countries with mounting sovereign debt problems and stagnant national economic growth. Changes in politics and ruling governments also meant changes to the priorities of education overall as a sector and the level of investments allocated to it.

REGION BY REGION

Europe has been the most prominent region for private capital investments in education. It is supported by stable legislation and regulation regimes across its jurisdictions, as well as strong political will and financial and institutional support behind the delivery of education projects. A number of education-specific policies and governments' financial commitments have helped to deliver education infrastructure—primarily school buildings.

Within Europe, the United Kingdom has been the most active market for private capital investments. It was supported by a well-established PFI procurement process,

Regional and country deal counts in education (1995 to October 2012)



Source:
Infrastructure Journal

as well as the U.K. government's support in the form of PFI grants and guarantees, the support of the European Investment Bank, and the government's landmark £55 billion Building Schools for Future (BSF) program, which in 2004 announced the goal of rebuilding every secondary school in England. These factors together helped boost private investments in the delivery of a number of school buildings, student accommodation, and higher education facilities in the country. There were a total of 254 projects valued at $26 billion reaching financial close in the U.K. market since 1995.

However, the United Kingdom may have trouble retaining its position as a global leader in attracting private investments for education infrastructure. In 2010, the newly elected U.K. government conducted a review of the BSF program, which resulted in the cancellation of around 700 schools throughout England. The cuts in the BSF program have affected the volume of private investments in education and lowered the United Kingdom's position in the global education infrastructure market.

THE FUTURE LOOKS SMARTER

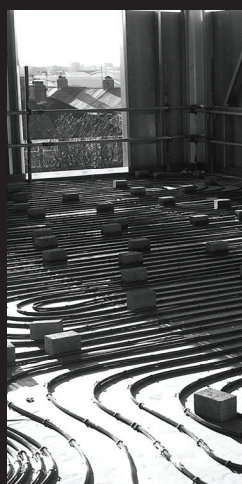
Going forward, emerging markets are set to increase their share in the global volume of education sector investments. Many of today's developing markets will be looking to build or modernize education infrastructure as a result of a growing student population. Emerging markets need to address population needs to create more inclusive growth patterns and to offer their workforce more and better jobs in their national economies. Many countries have already started to attract private expertise and capital to the construction, operation, and maintenance of schools through the use of PPPs; private capital is sometimes auxiliary and invested alongside regional or central government funding.

The United Kingdom, despite the government's decision to cut the BSF program, is still committed to delivering education projects, albeit through a modified PFI procurement model that came into force in July 2011. This $4.8 billion priority schools building program now has both PFI and fully government-financed school projects.

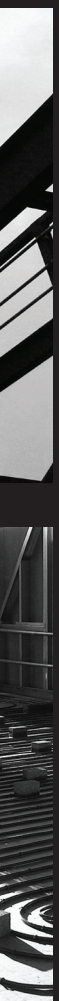
Consistently active education markets—including Canada, France, and the United Kingdom—currently have a late-stage mature pipeline of projects in education. Other countries across the globe are also delivering a number of education projects with the help of the private sector, including Brazil, Canada, Denmark, Egypt, Finland, Hungary, India, Ireland, the Netherlands, the Philippines, Poland, Russia, Saudi Arabia, and also the United States. By prioritizing investments in education infrastructure in tougher economic times, these governments ultimately hope to increase enrollment in schools and create jobs for education professionals while getting a head start on fulfilling their economy's skills requirements for the future. 🕮

Note: The charts were created using the data for the new-build or expansion construction projects and their primary financing; no secondary market activity has been included.

Photos © BSF in Hull



Tearing down walls



A new approach for education infrastructure

By John Kjorstad

In the late 1970s, Roger Waters, the former bassist and lyricist for the British rock band Pink Floyd, wrote a damning critique of a broken society in *The Wall*—the band's 11th studio album and a film of the same name.

A work of fiction, the concept behind *The Wall* was semiautobiographical and drew partially on Waters' own experiences growing up in the United Kingdom. He orchestrated distinctive events for the story that shaped a sense of abandonment and isolation in its main character, Pink. Over time, Pink builds a metaphorical barrier between himself and the world, leading to the album's most famous line: "All in all you're just another brick in the wall."

Inequality and an excessively rigid education system feature prominently in *The Wall*. A connection between Pink's personal deterioration through the building of a metaphorical barrier and the outmoded, aging bricks and mortar of Britain's post-World War II education sector can't be ignored.

The facility matters

Schools are institutions designed to make the most of our human capital. While learning is about much more than the physical environment in which it takes place, the chances for success clearly improve when students have access to appropriate and well-managed facilities. If education is about planting the seeds of knowledge within the fertile minds of youth, then creating the right environment to best facilitate learning should be a high priority for governments. Irrigation, fertilizer, and pest control aren't required to make a seed grow; but managed correctly, these techniques will increase crop yields. They also require more up front capital investment.

*to build **stronger** schools*

In these times of global austerity—when politicians around the world speak of prioritizing "economic infrastructure" or revenue-generating projects that may effectively fund themselves—financing the social fabric of our communities with public money is increasingly more challenging. This is where public-private partnerships (PPPs) can help.

Society must understand the difference between what it wants, and what it needs.

Since 2005, *Infrastructure Journal* has tracked more than 200 closed transactions funding PPPs in education. One hundred and fifty of these deals have been in the United Kingdom. Although Roger Waters had nothing to do with the creation of the private finance initiative (or PFI, for which we can thank John Major), his bitter observations on the U.K.'s education system in *The Wall* were not isolated. British citizens eventually came to the conclusion that they had underinvested in publicly-funded schools (not to be confused with "public schools," a term commonly used in England and Wales to refer to wealthier independent or private schools).

Building buildings

Building Schools for the Future (BSF) was the previous U.K. government's ambitious £55 billion master plan to rehabilitate its entire secondary school estate and tackle perceived inequality within the state education system. The worst facilities—often those in poorer urban areas—were given top priority and were among the first to receive investment when the program was launched in 2005.

The delivery of the BSF program was overseen by Partnerships for Schools, a non-departmental public body formed through a joint venture between the Department for Children, Schools and Families (formerly the Department for Education and Skills), Partnerships UK (which was later shoehorned into the Treasury and rebranded Infrastructure UK), and various private sector partners.

The first guy through the wall always gets bloody, and the U.K.'s BSF experience was not without its bruises. Each project was designed and procured individually, and local authorities in those first few waves of the program lacked the management expertise and capacity to oversee such ambitious projects. The complex levels of bureaucracy added to costly delays until eventually the procurement process was amended to eliminate capital waste and speed up delivery.

When the current coalition government came to power in 2010, the new Secretary of State for Education Michael Gove—a vocal critic of PFI—acted quickly and controversially to shut down the BSF program. He cancelled all projects not yet at the preferred bidder stage, sparking a legal battle with some of the local councils of the more than 1,000 schools yet to be built.

Looking back at its legacy, BSF and the Primary Capital Programme for primary schools did deliver billions of pounds of private investment for U.K. schools in a relatively short period of time. By June 2010, 178 schools had been rebuilt or refurbished, and 231 projects were under or entering the construction phase. The program had cost roughly £5 billion.

Lessons learned

What might the rest of the world gather from that experience?

First and foremost, society must understand the difference between what it wants, and what it needs. The U.K. program delivered some fantastic and uniquely-designed learning facilities—easily some of the best publicly-funded primary and secondary school infrastructure in the world. However, such excellence came at a steep price; the country's current political leaders have termed it extortion.

The United Kingdom has learned its lessons and is evolving the model it helped invent. At the time of writing, the British public is patiently awaiting further details on the country's next generation of PPP as well as Gove's chosen successor to BSF, a £3 billion priority schools building program. Other markets around the world have adapted the British PFI model to meet their own internal needs.

Education is one of the critical building blocks of a productive society, and BSF schools were ambitiously designed to inspire learning. If governments get it right, then future generations will pay dividends. If they get it wrong, then they're simply adding bricks to the wall. 🕮

Excellence came at a steep price; the country's current political leaders have termed it extortion.

By Ben Gerritsen & Fiona Natusch

A new *direction*

FOR NEW ZEALAND SCHOOLS

Is it better to combine several sites to achieve scale efficiencies, or instead limit project scope and respond to local needs? New Zealand's government recently discovered that "right sizing" an education PPP transaction involves complex trade-offs that are critical to a project's success.

Photo © George Clerk/istockphoto

In April 2012, New Zealand's government contracted a private consortium to design, build, finance, operate, and maintain two new schools. This is the first public-private partnership (PPP) for schools in New Zealand, which until now have been financed and maintained by the Ministry of Education.

The government put considerable effort into building a strong framework for school infrastructure PPPs, providing useful lessons for other countries considering PPPs in the education sector. This article explores the challenge of "right-sizing" school procurements to maximize the benefits delivered by the project.

THE BELL RINGS IN 2013

The two new schools developed under the PPP model are located at Hobsonville Point, Auckland, and have an expected construction cost of around $57 million. The school bell will ring in January 2013 to begin primary school classes, and the secondary school is due to open at the start of 2014.

The PPP contract focuses on school infrastructure only, so the government will still be responsible for employing principals, teaching staff, and school administrators. However, one of the benefits of the PPP transaction is that school staff will have more time to focus on providing high quality education, with less time spent on managing the ongoing maintenance of school property.

MODEL NOT NECESSARILY TO SCALE

New Zealand's government recognized that preparing and tendering a PPP transaction would likely increase upfront transaction costs of procurement to more than 10 percent of the transaction value. These costs are not only borne by the government, but also by consortia putting together complex bids with risks carried over 25 years. These transaction costs include legal advice, proposal preparation costs, initial design, evaluation, and contract negotiation costs.

As a result, if the PPP transaction was too small, the project would be unlikely to provide enough benefits to exceed the total costs. For example, it would make little sense to spend a fixed $5 million to prepare a $15 million transaction.

This means that scale was required. The Ministry of Education analyzed more than 10 proposed "bundles" of new schools to be procured under the first PPP contract. These bundles included one, two, or five schools and were assessed against criteria that included:

- Sufficient project size;
- Risk to government (i.e., complexity of managing the contract);
- Potential for competitive tender process;
- Potential to bundle contracts; and
- Scope for innovation.

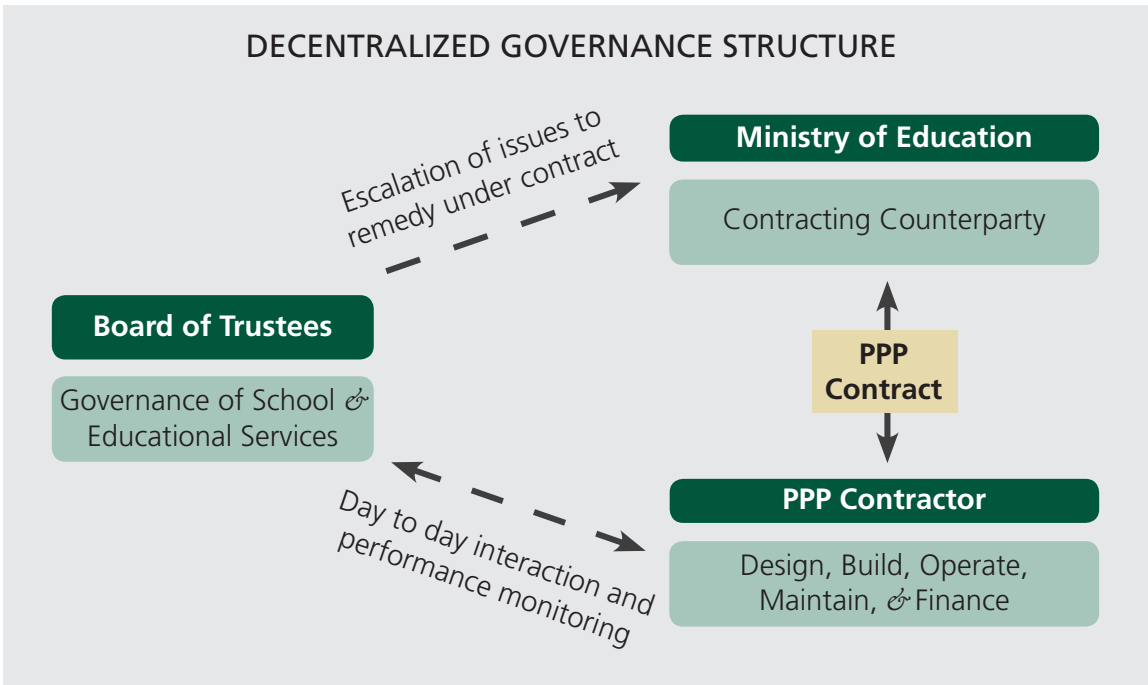
The winning option—to bundle the Hobsonville Primary and Secondary schools together—achieved some scale while attracting a sufficient number of bidders to maintain competitive tension throughout the procurement process.

While the option of bundling more schools together took advantage of scale, this option was considered to have the highest risk to the government. This option may also have discouraged potential bidders worried about servicing contracts in very different locations.

LOCAL INPUT

Local communities have substantial involvement in New Zealand schools. Each school is governed by a board of trustees (BoT) that includes five parent representatives, the principal, a staff representative, and a student representative. This decentralized governance structure helps individual schools interact with their communities, and this responsiveness needed to be preserved as part of the shift to PPPs.

What does local community input mean for right-sizing a PPP school? On the one hand, the contractor can take advantage of scale by building and operating multiple schools under a single procurement and contracting process. On the other hand, this risks reducing the accountability for good contractual performance, as distinct issues at the school level may not be understood by either of the contracting parties (the ministry or the private contractor).



To operate effectively, the PPP contractor needs to have individual partnerships with the BoT, staff, and principal at each school. These parties monitor the day-to-day operations and maintenance of the school property, even though the contract is held by the Ministry of Education.

Smaller-sized contracts can help ensure that the PPP contractor has a strong relationship with school staff and the local community (through the BoT), and is held accountable for day-to-day operations and maintenance.

Good lines of communication also ensure that serious issues identified at the school level (by staff, principals, and BoTs) can be escalated to the ministry and effectively resolved through contractual mechanisms if required.

THE FINAL EXAM

One of the contracting options considered in New Zealand was a single transaction covering three geographical regions, which included a total of five schools. This structure would take advantage of scale, but would limit opportunities for the private contractor to reduce the costs of operating and maintaining the facilities.

Coordinators of the project compromised by including two schools in the same suburb under one contract to achieve some scale. Both these schools have similar community concerns and the contractor can lower its operational costs by effectively servicing the nearby facilities. This "right sizing" signals a new direction for schools that need to map out the best possible future for their students. 🕮

RESULTS ARE IN

Each of these challenges has resulted in lessons that New Zealand's government —and others around the world—can implement when considering education PPP contracts.

- Contracts need to ensure that the PPP contractor is held accountable to school-level authorities (principal and staff) who will be able to monitor the performance of the contractor, but will not be the contract counterparty.
- The decision to proceed with a PPP needs to be based on a realistic estimate of the costs of the transaction to both the public and private sectors. The benefits of greater competition are only possible because bidders are prepared to put time and resources into analyzing and pricing risks.
- Clustering several schools within a geographic region helps to achieve scale while containing costs to service the facilities and offering the ability to be responsive to the needs of the local community.

Not just another **social accommodation project**

By Jason Radford & Paul Angell

Education public-private partnership (PPP) projects are not just another form of social accommodation PPP. They involve the assessment of a number of unique issues. For the most successful outcome, both the public and private sector should address these issues at an early stage in the procurement and implementation process. This will help all parties appropriately manage the structural, technical delivery, and risk allocation arrangements; ensure that such projects are financeable; and avoid any unexpected surprises. We have sought to set out below a handful of some of the challenges that are relevant to or arise in the different phases of the project's life.

SCOPING THE PROJECT

INFORMATION TECHNOLOGY

In structuring an education PPP, those involved should decide at an early stage how information technology (IT) will be delivered and operated. Simply adding IT delivery to the scope of project operations is unlikely to be the answer. In fact, the use of the PPP model in the IT market has historically been beset with problems. Challenges include performance management (e.g. monitoring and identifying performance failures and allocating responsibility), limitations on the availability of replacement IT contractors, and the refreshing of obsolete software and technology. In addition, IT contractors are frequently unfamiliar with PPP risk transfer principles, and IT technologies may be alien to construction contractors, so there can be a lack of appreciation of the complex interfaces that result.

Integrating IT installation into the education PPP is achievable but should be approached with caution. Its inclusion creates a number of issues, and should be balanced against any adverse impact on value for money given the contractor's need to manage, for example:

- The interdependencies between the works and IT installation during construction and operations phases;

- The ongoing allocation of responsibility for performance of the passive and active networks;
- The scope of the IT installation tests during handover; and
- The consequences of IT contractor failure given the strength of IT contractor balance sheets and the value of the IT contract relative to the overall PPP project.

COMMUNITY BENEFIT

Often, procuring authorities ("Authorities") will want to utilize their new asset to provide wider community opportunities and benefits. If the Authority envisages the school operating as a multifaceted community facility, a number of additional issues need to be considered. These include:

- Is the contractor entitled to generate revenue from third-party activities outside of school hours and if so, from which activities?
- Will these revenues be "hard wired" into the financial model to reduce the Authority's availability payments or will they be shared as potential "upside" only?
- How will the number and type of Authority "community use" hours be identified?
- How much will it cost to keep the school open during community use periods?
- Which areas of the school will be used for community use and how will performance/availability deductions be calculated and allocated during community use periods?

CONSTRUCTION

PROGRAMMING

Typically, Authorities will not want to move into new school buildings during term time. From the contractor's perspective, this places stress on late completion risks, as minor delays may result in disproportionate "penalties" i.e., not just for the period of the delay, but until the next available holiday—when the school can be handed over.

It is important that each party's responsibilities are fairly balanced.

The delay risk is exacerbated by several factors, such as the pressure that the handover restriction places on longstop default termination dates. This can be an issue where a contractor is ready to handover but is prevented from so doing until the next holiday and, as a result, hits the longstop termination date. Another risk factor involves the interfaces at play with multiple parties engaged in the handover process. Examples may include maintenance contractor mobilization to start operations, Authority relocation arrangements, and IT installation and testing processes.

These risks can and should be mitigated. Typically, the right combination of factors would include:

- Scheduling handover during the longer holidays;
- Giving the contractor some flexibility to amend the construction timetable;
- Incorporating reasonable "slack" in the construction timetable; and
- Negotiating adaptable interface and resolution arrangements among all involved in the handover process.

PHASING

Further complications can arise where an Authority wishes to move into a school in stages, or procures a number of facilities under one agreement. Authorities should be cognizant of and structure around issues such as:

- Termination risks created by maintenance subcontractor default during the construction phase (particularly given the likelihood of limited maintenance subcontractor liability caps);
- How defaults/termination triggers are applied and calibrated at one school and across all of the schools (i.e., can performance failure at one school result in possible termination of the entire project?); and
- Changes to the contractual mechanics and associated arrangements required as schools are handed over (including with respect to termination triggers, deduction levels, and insurance coverage).

POST-COMPLETION WORKS

Once the school has been handed over, there is often an issue of how to program the "post-completion" works. This can refer potentially to the demolition of the old school, laying playing fields, or any number of factors that arise. The solution for these post-completion works will vary depending on their value, nature, and importance to the provision of education. However, issues to consider include:

- The proportionality of the Authority's remedies for failure to complete the works (i.e., termination, step-in, deductions);
- The trigger date for the period given to the contractor to complete the works; and
- Managing delays in handing over playing fields, etc., given seasonal planting restrictions.

OPERATIONS

Damage and vandalism

The operation of a school creates unique issues that relate to damage and vandalism. Allocating responsibility for damage or vandalism caused by (i) children, teachers, or the local community (present with permission); and (ii) anyone entering the school without permission can be a tricky line to draw. This is particularly true when

the contractor has complied with its obligations and is not at fault.

It is important that each party's responsibilities are fairly balanced. In particular, thought should be given to:

- Whether responsibility for damage/vandalism is to be allocated by reference to areas of "control";
- How damage/vandalism is distinguished from "fair wear and tear";
- Which party has the burden of proving responsibility for the damage/vandalism;
- Which assets fall within the damage/vandalism risk profile; and
- The adequacy of the standard project insurances in respect of vandalism risks. 🕮

Ashurst LLP is a market leader in the PPP education market, having closed over 80 education PPPs acting for the public and private sector with a capital value of over $9 billion. This has included working on projects in Australia, Egypt, France, Ireland, the U.K., and Singapore.

Photo © miggslives

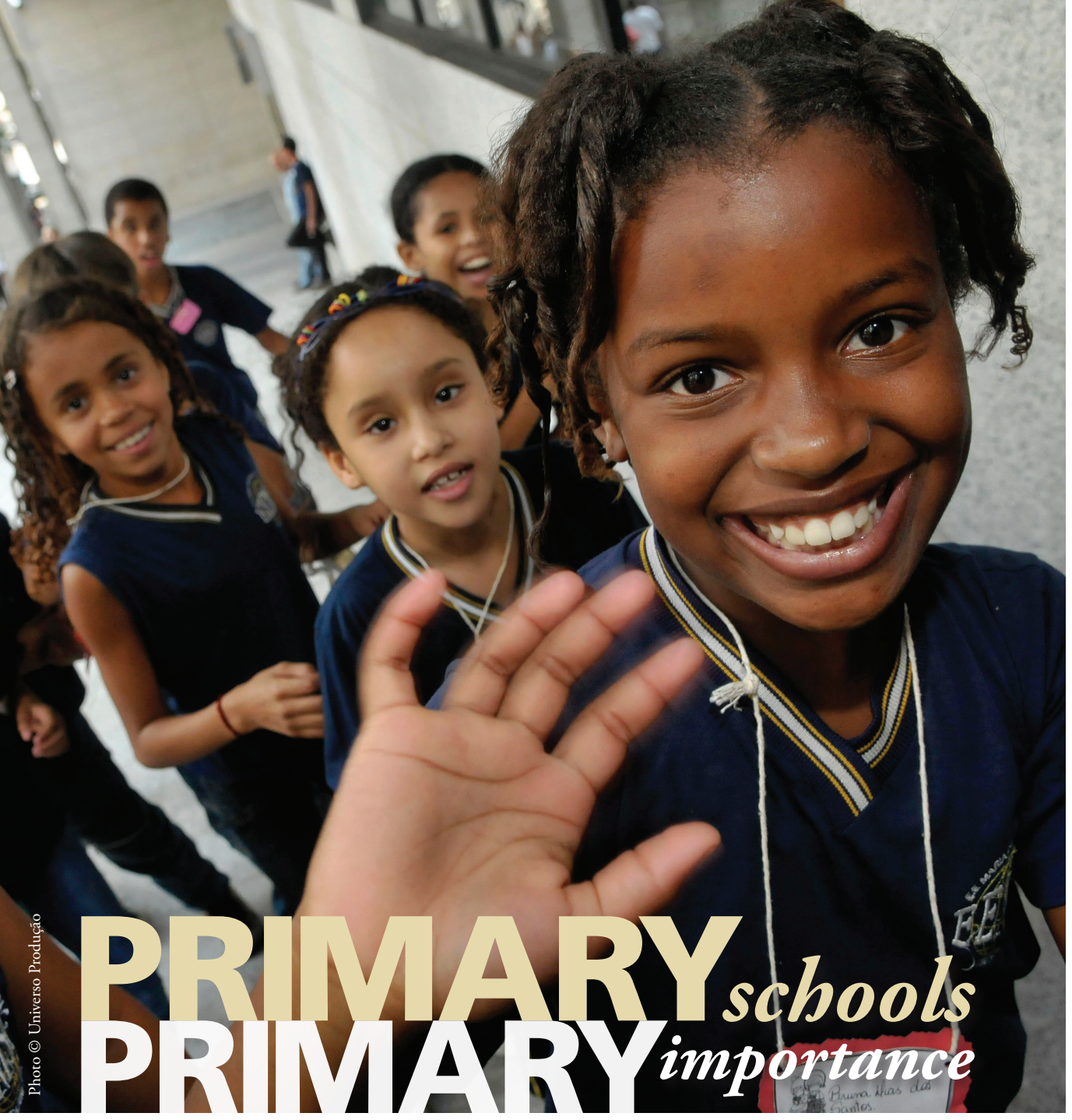


Photo © Universo Produção

PRIMARY *schools*
PRIMARY *importance*

Brazil's early education PPPs expand access to learning

Belo Horizonte, one of the largest cities in Brazil,, has made early education a priority in an effort to improve the long-term competitiveness of its workforce and support the national government's policy goals. With IFC's assistance, it turned to private sector funding and expertise to expand and strengthen its preschool and primary school system. The concession—Brazil's first public-private partnership (PPP) in the education sector—was awarded in July 2012. The partnership will expand access to early education in Belo Horizonte, reaching 18,000 additional children and creating new jobs in the education sector.

In the following joint interview, Afonso Celso Renan Barbosa, interim Education Secretary for Belo Horizonte, and Marcello Faulhaber, Development Secretary for Belo Horizonte, share their lessons from the project.

Interview by Tomas Anker

Marcello Faulhaber

Afonso Celso Renan Barbosa

Why is childhood education in Brazil such a priority?

In Brazil, childhood education is very important due to our sociocultural situation. Many women in Brazil become mothers at a young age, so by promoting education for children, we can simultaneously ensure that mothers are better prepared for life and work.

Why do you think the Belo Horizonte schools PPP was so successful?

We believe our PPP was very well designed. First, we started with an existing project that already had achieved good results and was well accepted by the public. This acceptance gave rise to the increasing demand from the city. As the PPP allows us to implement several projects within a very short timeframe, it will allow us to fulfill the demand we are experiencing. In addition, the PPP frees the municipality from having to handle day-to-day school management, allowing us more time to focus on educational policy.

continued on p. 31

The municipality of Belo Horizonte, the capital of the Brazilian state of Minas Gerais, has made early education a top priority. Until recently, there was a critical gap in access to education, with over 11,000 children (many underprivileged) on a waiting list to enroll in school. In solving the problem, the municipality adopted a long-term approach, operating under the belief that a strong educational foundation is necessary to improve the competitiveness of the workforce in a growing region. This fit within the agenda of Brazil's federal government, which has made strengthening education a primary objective.

By promoting education for children, we can simultaneously ensure that mothers are better prepared for life and work.

But the municipality's efforts were hampered by technical and financial limitations. It faced a shortage of school buildings and had the resources to meet only about 35 percent of demand. It also lacked the resources to manage procurement of construction services and manage the non-pedagogical services of new schools. To address these issues, Belo Horizonte decided to explore options for the private sector to expand and strengthen its early education system.

As lead advisor to the municipality, IFC explored ways that this private sector participation could help advance Belo Horizonte's early education system, and what mechanisms could be used. Because there was no history of public-private partnerships (PPPs) in Brazil's educational system, IFC used examples from other countries to develop a detailed model, demonstrating how a well-designed PPP could help the municipality meet its objectives.

NEW SCHOOLS, DELIVERED QUICKLY

IFC proposed a 20-year concession to finance, build, equip, and operate non-pedagogical services for 32 new preschools and five primary schools. Compared to the traditional procurement process, private sector involvement will significantly shorten the time required to build and launch these new schools. The new units will be delivered within two years of signing, which is a record in construction procurement timing by governments. Primary schools will then become operational about one year after that.

Under the terms of the concession, the municipality is required to provide sites for the facilities while the private sector partner is responsible for the construction and operation of non-pedagogical services, such as cleaning, surveillance, laundry, maintenance, and utilities management. This approach improves overall administrative efficiency by consolidating these services under

a single provider. This also enables the directors of the schools to focus on teaching rather than managing multiple vendors.

The private partner was selected through a competitive bidding process. Its services will be measured according to a set of performance and availability indicators which will then be assessed by an independent verifier.

RESULTS

- Provides for the construction and operation of non-pedagogical services for 37 new schools (32 preschools and five primary schools) in less time and at a lower cost.
- Over 18,000 children from low-income areas of the municipality will be able to attend kindergarten and elementary school.
- Mobilizes $80 million in private sector investment.
- Offers tremendous replication potential in other states and municipalities of the country, thereby supporting the overarching educational goals of Brazil's federal government. 🕮

continued from p. 29

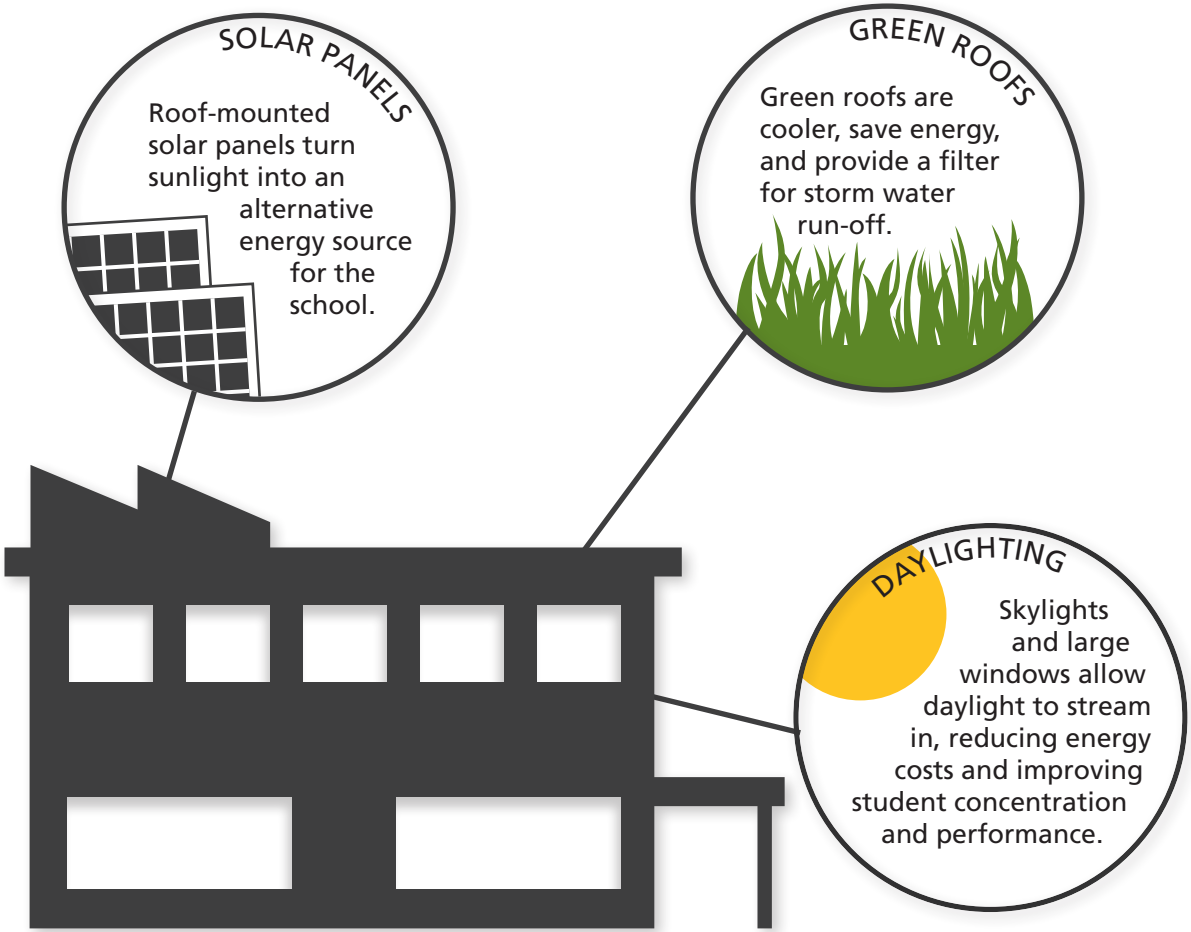
Why is this new approach important?

Maintenance and administrative duties constitute some of the biggest managerial burdens today, and this administrative burden distracts school principals from their main responsibility.

How would you advise other municipalities that would like to initiate similar PPPs in education?

- Be sure that you have the right political arrangement and support to move this forward.
- Make partnerships with good advisors such as IFC and the Brazilian Development Bank.
- Have a department responsible for PPPs in your government directly linked to the mayor.
- Involve a variety of government departments in the development of the project (for example, legal, finance, civil works, and education).
- Set up appropriate guarantees for the project before signing the partnership contract. 🕮

SUSTAINABLE SCHOOL BUILDINGS



Sources: The Center for Green Schools and the U.S. Green Building Council.

LEED CERTIFICATION

LEED Certification confirms that the school has been built to the highest possible environmental standards.

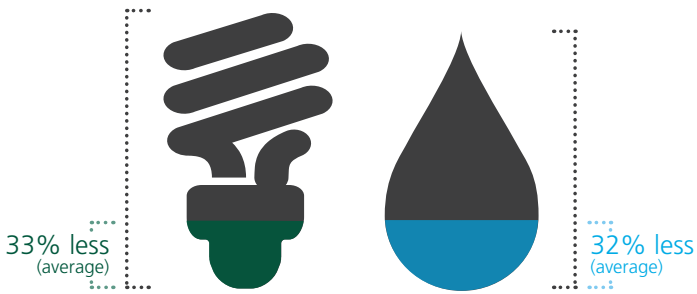
WATER EFFICIENCY

Low-flow sinks, waterless urinals, and dual-flush toilets reduce total water use by as much as 50 percent.

ENERGY EFFICIENT LIGHTING

Adding remote sensors, individual controls, and task lighting can greatly reduce electricity costs.

Green schools use less energy and emit less CO_2 than conventionally designed schools.



On average, green schools save

$100,000

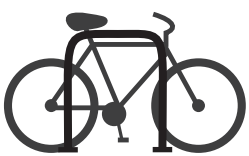
per year on operating expenses.

RECYCLING

Diverting solid waste from landfills reduces impacts on municipal services.

ALTERNATIVE TRANSPORT

Alternative-fuel buses reduce CO_2 emissions and decrease smog and ground level ozone. Bike racks, safe bike paths, and sidewalks encourage an active lifestyle and decrease emissions.



PPPs Build the Future

By Norman LaRocque

When the Philippine government adds two years of senior secondary school to its required 10 years of basic education beginning in 2016, an additional 2.7 million students will flood schools already so full that students attend in shifts. Accommodating these new students in state schools will require a significant school building program. The government has taken its first steps toward addressing the existing classroom shortage using a public-private partnership (PPP) procurement modality—the PPP for School Infrastructure Project (PSIP), which aims to build up to 20,000 classrooms over a two-year period.

Photo © Moyer Photos

INFRASTRUCTURE

The Philippines faces significant shortages of school inputs, including teachers, classrooms, textbooks, and chairs. In June 2010, it was estimated that the Philippines was short more than 66,000 classrooms, and the shortfall has likely increased since then. Not surprisingly, class sizes are large, and many schools operate double shifts. In some cases, one set of students attends school on Mondays, Wednesdays, and Fridays, and another set attends on Tuesdays and Thursdays.

Absent any action, classroom shortages will become more acute when the government introduces the senior secondary component of its flagship K to 12 (kindergarten to twelfth grade) agenda beginning in school year 2016. One of the key planks of that policy is the addition of two years of senior secondary school (grades 11 and 12) on top of its existing 10 years of basic education. The Department of Education (DepED) estimates that the introduction of this policy will mean an additional 2.7 million students in the school system (2 million from public junior secondary schools and 0.7 million students from private junior secondary schools).

ACCOMMODATING ADDITIONAL MILLIONS

The government has identified a variety of possible responses to the challenges posed by the K to 12 agenda. While the official policy response is still being developed, it is expected that incoming students from public junior secondary schools will be accommodated through a combination of subsidized enrollments in private senior secondary schools and tertiary education institutions, and through increased numbers of students in state schools.

Accommodating these new students in state schools will require a significant school building program—particularly because it comes on top of the infrastructure requirements to address existing shortages. The government has taken its first steps toward addressing the existing classroom shortage using a public-private partnership (PPP) procurement modality—the PPP for School Infrastructure Project (PSIP), which aims to build up to 20,000 classrooms over a two-year period.

The PSIP is intended to complement DepED's existing classroom construction initiatives, and involves the design, financing, construction, and maintenance of more than 9,000 one- and two-story classrooms, including furniture and fixtures, at locations in three DepED regions.

The PPP involves the use of a build-lease-transfer concession model and is projected to cost approximately $400 million. DepED is the implementing agency for the PSIP, with support from the PPP Center of the Philippines. In early October 2012, DepED signed agreements with two consortia for the first phase of the PSIP. The next phase will involve 10,600 classrooms covering remaining shortages in Luzon, Visayas, and Mindanao.

PPPs IN THE PHILIPPINES

The Philippines has been a leader in the use of non-infrastructure forms of PPP, such as contracting for the delivery of education services. The country's Education Service Contracting (ESC) scheme, a government program that pays private schools to enroll students at public expense to reduce state school overcrowding, has been in operation since 1987.

Although PPPs are not a panacea, they can play a key role in improving infrastructure in the Asia and Pacific region.

The Philippines was one of the first developing countries with a Build-Operate-and-Transfer (BOT) Law and a dedicated BOT Center. Despite some early achievements in the power sector, progress subsequently lagged due to weak PPP governance and an increase in unsolicited proposals. The advent of the Benigno Aquino administration in 2010 provided new impetus

for implementation of infrastructure PPPs, and the usefulness of these PPPs has since broadened to other sectors, including health and education. One result is that the government has taken steps to revitalize and transform the former BOT Center into the PPP Center of the Philippines.

The Philippines has been a leader in the use of non-infrastructure forms of PPP, such as contracting for the delivery of education services.

To support the introduction of the K to 12 agenda, the Asian Development Bank (ADB) is working with the government to prepare an education improvement program. The program is examining the use of infrastructure PPPs for the construction of senior secondary schools, as well as the use of innovative mechanisms for the finance and delivery of senior secondary schooling (including private sector delivery). The ADB, along with the government of Australia and the government of Canada, has provided technical assistance to support the strengthening of the PPP Center of the Philippines.

A centerpiece of this program is the Project Development and Monitoring Facility (PDMF), an innovative revolving fund facility that provides funding for professional transaction advisory services for PPP projects, including preparation of pre-feasibility, feasibility studies, bidding documents, draft contracts, and assistance to government agencies in the bidding process. The PDMF provided funding for the successful bid of the PSIP project to the private sector in October 2012.

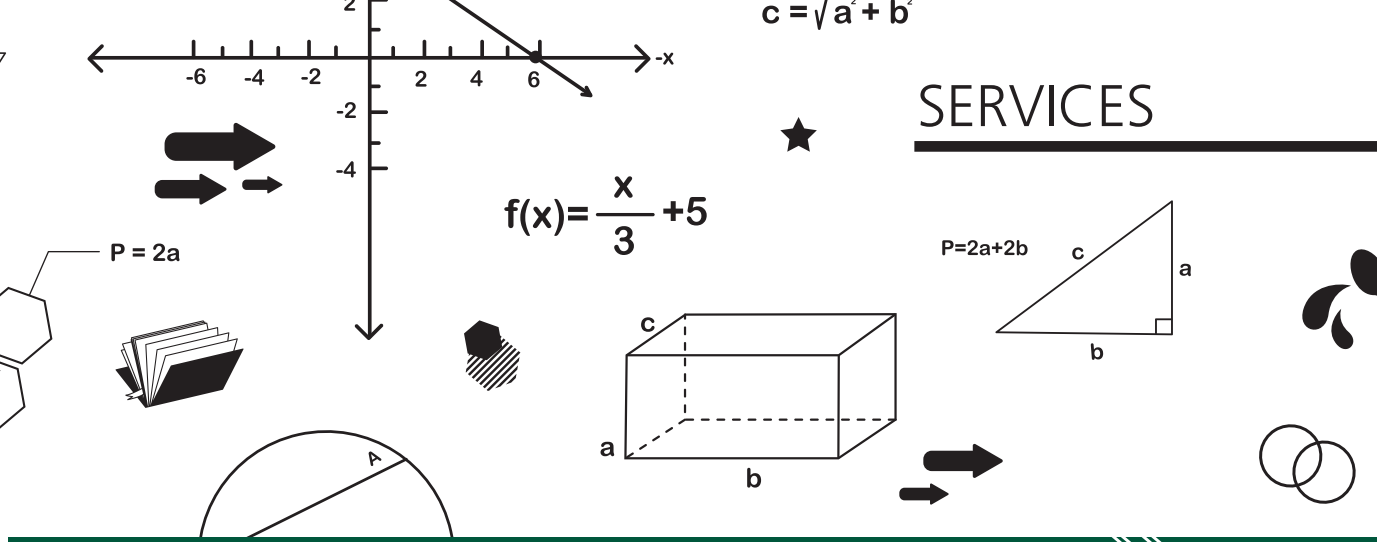
A NEW CHAPTER FOR ASIAN PPPs

PPPs are garnering increased interest within the ADB, driven in part by Asia's significant infrastructure backlog and the organization's focus on private sector development and private sector operations as a driver of change in its long-term strategic framework. Although PPPs are not a panacea, they can play a key role in improving infrastructure in the Asia and Pacific region. Increased demand for access to quality education and training eases the way for private investment, particularly through the use of infrastructure PPPs. There are many reasons for this, including the relative stability of demand in the sector, the less complex nature of the sector compared to others, and the less extensive project safeguard issues that arise in education projects compared to others, such as transport.

Infrastructure PPPs in the education and training sector can help meet rapidly growing school infrastructure requirements, create better teaching and learning environments, and improve maintenance by pre-committing governments to maintaining schools once they are built—a perennial problem in the education and training sector. 🕮

a charter for change

Approaches to charter schools differ, but goals are the same



School choice is an explosive issue in some communities, especially when neighborhood boundaries don't map to schools that perform to parents' satisfaction. Charter schools in the United States (similar to "free schools" in the United Kingdom) are experimenting with approaches to partner with the private sector under the auspices of an agreed-upon charter, or mandate, to deliver education to publicly funded students. Charter schools receive public money (and like other schools, may also receive private donations) but are not subject to some of the rules, regulations, and statutes that apply to other public schools. Instead, charter schools are expected to produce certain results, set forth in each school's charter.

However, in exchange for being exempt from these rules, charter schools receive less funding than public schools in the same area: typically, they receive only per-head funds (a certain amount per student) and do not receive any facilities funding to cover maintenance and janitorial needs.

Launching and operating a charter school requires both political and practical savvy. U.S. Secretary of Education Arne Duncan touches on that point in the following interview, noting that "good charter schools are part of the solution, bad charter schools are part of the problem." Further exploring the mechanics of charter schools, Michelle Rhee, founder of StudentsFirst and former Chancellor of the Washington, D.C. public school system, discusses navigating the political landscape to achieve top results for charter school teachers and students across the country. Drilling down to the local level, Emily Lawson, founder of a successful Washington, D.C., charter schools network, explains how to combine a grassroots approach with a more polished marketing campaign to conduct the community outreach required for such a large-scale system.

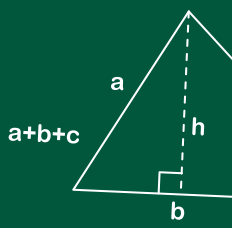


Illustration © Mustafa Hacalaki/istockphoto

Photo © Students First

Michelle Rhee is Founder and CEO of StudentsFirst, a grassroots movement designed to mobilize parents, teachers, students, administrators, and citizens throughout the United States, and to channel their energy to produce meaningful results on both the local and national levels. She was previously Chancellor of the District of Columbia Public Schools, a school district serving more than 47,000 students in 123 schools.

Philosophy in practice

What has defined the success of the movement in the United States to include the private sector in public education through charter schools?

Public charter schools employ two principles commonly found in the private sector, accountability and innovation. These two principles, when used correctly, can produce successful schools and high levels of student achievement. In fact, a just-released study by a Stanford University research center shows students in New Jersey's public charter schools experienced greater learning gains than those in comparable district schools. Public charter schools typically have much more flexibility to try new educational approaches than traditional district schools and often serve as models of innovation. With the added flexibility must come accountability standards to assure all schools are providing kids with the best education possible.

> "Successful charter schools demonstrate the possibilities of public education and provide a road map for scaling up the most successful strategies."

What hurdles has the charter school movement had to overcome, and what are the biggest continuing challenges?

Among the major hurdles public charter schools encounter are various state laws restricting alternative public schools' options. Recently, voters in Washington State approved a ballot measure allowing for public charter schools. However, there are still eight states that do not allow public charter schools at all. In other states, caps exist on the number of public charter schools that can operate. Rather than focusing on the number of charters, states should remove arbitrary caps and create a system with clear accountability provisions to ensure that the charters that exist, that all schools for that matter, are serving students well.

Charter schools generally also have to overcome hurdles in many states and districts related to funding and facilities. Most public charter schools report that they don't receive funding to cover the cost of securing and maintaining school buildings and thus must stretch their operational funds to cover facilities as well, unlike traditional public schools. Also, right now, some states fail to ensure that charter schools receive their fair share of student funding. Rather, local districts and charter school authorizers are permitted to retain a percentage of these funds—taking money away from the classroom. Policymakers must work to ensure we have equitable per-pupil funding for public charter school students.

Photo © Ms Smitty B

Charter schools are innovative in part because they have the flexibility to respond to the needs of the community they serve. This flexibility seems to be an important component of the paradigm shift in education that's taking place. What other ways do charter schools contribute to the paradigm shift in education?

Successful charter schools are showing what is possible in public education and providing a potential road map for scaling up what works. Public charter schools are showing that it is possible to deliver a great public education to students in some of the most challenging environments by establishing a culture of high expectations and delivering great instruction. Charters tend to place a great emphasis on recognizing, rewarding, and retaining excellent teachers and principals. Many charter schools are also taking the lead in integrating digital learning into the curriculum. However, this autonomy also must come with accountability for results—as it should for all schools receiving public funds. 🕮

Photo © DC Prep

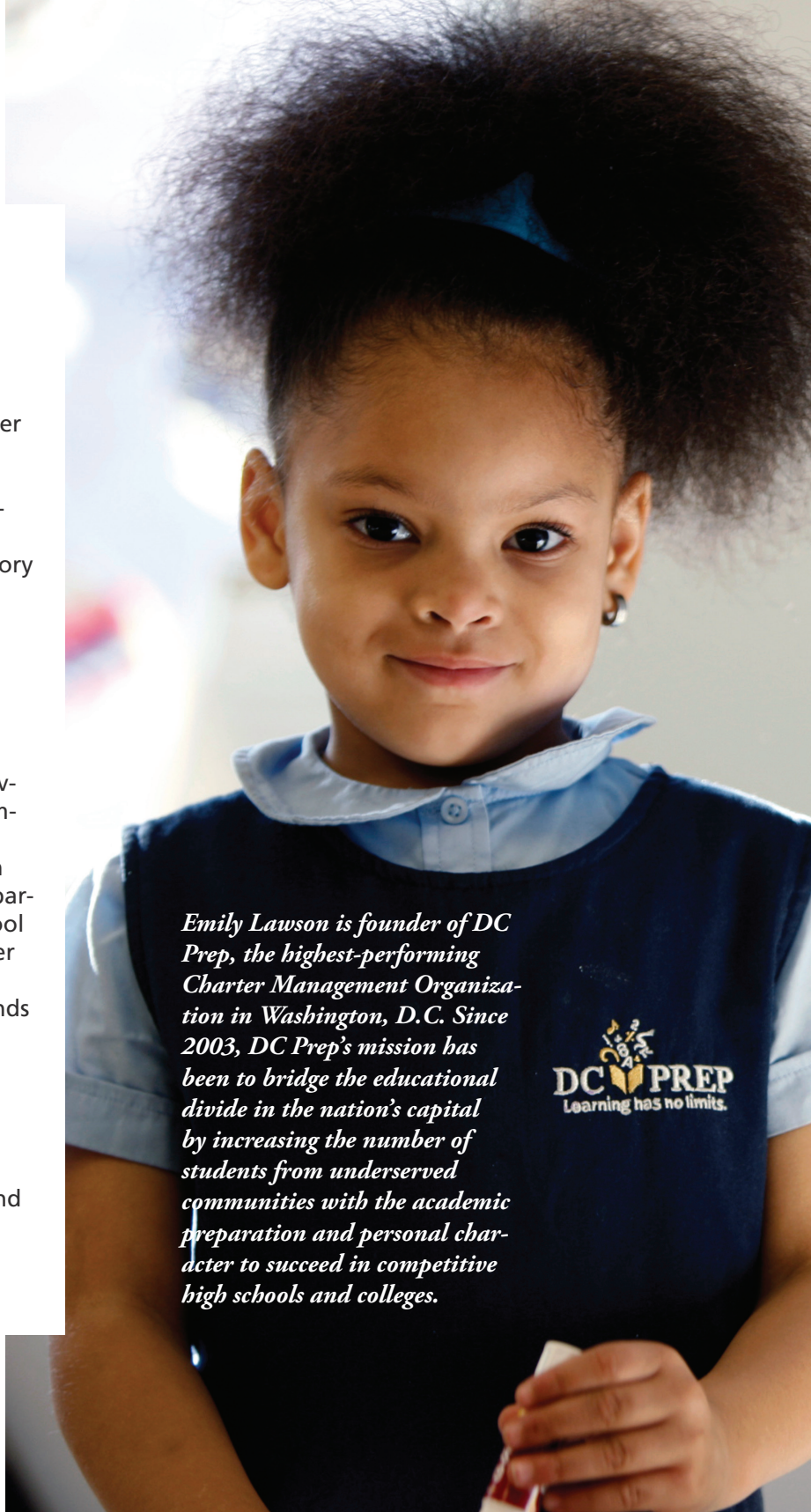
1, 2, 3

THREE CHARTER SCHOOL APPROACHES THAT PASS THE TEST

KIPP: The Knowledge is Power Program (KIPP) is America's largest network of charter schools. It operates a nationwide network of free open-enrollment college preparatory schools in under-resourced communities, usually established under state charter school laws.

Harlem Children's Zone: A non-profit organization for poor children and families living in the New York City community of Harlem, providing free support for the children and families in the form of parenting workshops, a preschool program, three public charter schools, and child-oriented health programs for thousands of children and families.

DC Prep: Washington, D.C.'s highest-performing Charter Management Organization, with a network of preschool to eighth grade campuses and a record of achievement.



Emily Lawson is founder of DC Prep, the highest-performing Charter Management Organization in Washington, D.C. Since 2003, DC Prep's mission has been to bridge the educational divide in the nation's capital by increasing the number of students from underserved communities with the academic preparation and personal character to succeed in competitive high schools and colleges.

Prepping neighborhoods *for change*

What's your advice on the best way to conduct community outreach from the time a charter school is first proposed?

In a highly "charterized" urban area like Washington, D.C., parents have many choices when it comes to where to send their child to school every day. In this kind of environment, it's critical for key people in any new charter school to spend a lot of time in their campus' surrounding neighborhood. When DC Prep was still just an idea, my core team and I would go door-to-door to the various organizations headquartered in the neighborhood around our flagship school to forge relationships with community leaders and better understand residents' perception of the need and receptivity to a school like ours.

Did you approach these community organizations with a set idea and plan already in place?

You need to have enough of a guiding vision and mission for people to react to, but also want to have flexibility or room for customization at the same time. Ultimately, you want to be able to ask people authentically for their input, and be able to implement it. I don't think you should ask for input if you're not willing to take it. It's a give and take, but the key is frequent and open communication with key community-based stakeholders.

Photo © DC Prep

How did you approach individual citizens in the neighborhood?

DC Prep has always found success with grassroots outreach in the community around each of our campuses—including grocery stores. When DC Prep was opening up, I spent a lot of time outside of neighborhood grocery stores. I even had my own folding chair! I talked to people as they walked in or out, asking if they had a child who was the right age level for our school. This sort of 1:1 contact with individuals is incredibly instructive—in many ways it provides a de facto "focus group" of sorts, canvassing a representative sample of the community, gauging interest and a parent's receptivity to enroll their child in a new school. To this day—a decade after opening our first campus—DC Prep still engages in this "high-touch" form of grassroots outreach in our surrounding neighborhoods. It's something we've always deeply believed in, and found to be immensely helpful in getting the word out, admitting new students, meeting key members of the neighborhood, and staying in touch with the general pulse of our campus' surrounding communities.

What did you learn from approaching people and groups to present the idea for DC Prep?

Starting a charter school is a little like a political campaign; you need to keep your audience in mind. A foundation representative is more interested in hearing about different aspects of the school than a parents' group. I quickly learned to tailor key ideas for specific stakeholders I was talking to at any given time.

What other forms of outreach were successful?

Early on, we went door-to-door in residential neighborhoods dropping off flyers and information, and also did direct mail campaigns in target communities surrounding our campuses. Throughout DC Prep's history, we have always engaged in a broad array of marketing tactics that were the right fit for D.C. Every city will require a different kind of outreach, tailored to the families there, and it's important for a charter organizer to spend time figuring out what kind of outreach best suits their school and community needs.

There's often a philosophical disagreement over private sector involvement in education. Did your community outreach help you when you faced the inevitable opposition?

Since our inception, we have always had a strong group of core supporters – from prominent community leaders, to local foundations and nonprofits, to committed, happy parents willing to speak out on our behalf. When faced with any opposition, we could go back to our supporters and get a read on the situation and how serious it was. Our governance structure helped us navigate these sorts of challenges as well. In

addition to our very active Board of Directors, I set up different advisory groups, such as a teachers' advisory group, which was comprised of volunteers with experience in a particular area. These experts were available to me whenever challenges arose, and were able to credibly speak out on behalf of DC Prep.

What are the three lessons you learned from this process that are important for someone who would like to set up a charter school?

In looking back on DC Prep's history, I firmly believe that strong governance and a financial foundation is critical, but not enough. You have to attract and retain great educators, who are adept at teaching challenging academics, while also building strong social skill development in students. 🕮

Emily Lawson

Free schools *in the* U.K.

Founded in the United Kingdom, Free Schools are all-ability state-funded schools set up in response to what local people need in order to improve education for children in their community. Through the government-funded Free Schools program, teachers, charities, parents, and education experts can open schools to address real demand within an area. The U.K. Department for Education provides the necessary resources for communities, along with an interactive map and a list of all the open Free Schools.

Free Schools are a relatively new phenomenon in the United Kingdom, though they grow out of a longstanding demand for alternative schools with a variety of different approaches and funders. The first Free Schools opened in September 2011, just 15 months after the U.K. Secretary of State, Rt Hon. Michael Gove MP, invited proposals from groups interested in setting up a new school. Here, he speaks about the 24 Free Schools that opened in September 2011.

U.K. SECRETARY OF STATE FOR EDUCATION MICHAEL GOVE ON FREE SCHOOLS

American schools on the WORLD STAGE

U.S. Secretary of Education on the keys to global competition

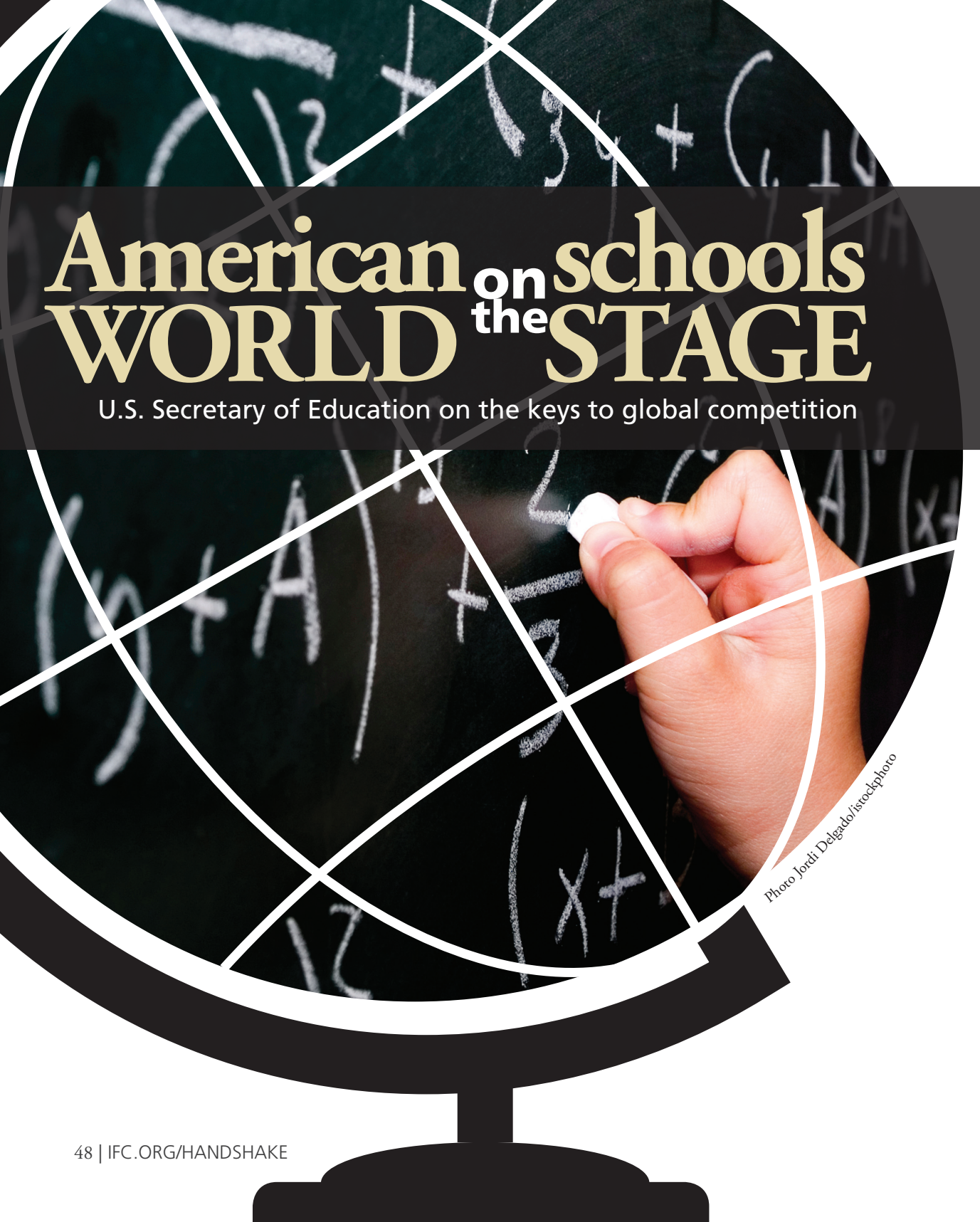


Photo Jordi Delgado/istockphoto

Arne Duncan has served as U.S. Secretary of Education since 2009. During his tenure, he helped to secure congressional support for President Obama's investments in education, including the American Recovery and Reinvestment Act's $100 billion to fund 355,000 teaching jobs, increases in Pell grants, reform efforts such as Race to the Top and Investing in Innovation, and interventions in low-performing schools. Before becoming secretary of education, Duncan served as Chief Executive Officer of the Chicago Public Schools.

Making American schools competitive globally is a primary goal of the U.S. Department of Education, and you mentioned in a recent blog chat that we have to look at high-performing countries like Finland and Singapore for new ideas on what works. What models have you seen operating successfully outside of the U.S. that should be adapted by American schools?

In the current global, knowledge economy, America's education system has stagnated just as a world-class education has become more essential than ever to individual success and national prosperity. We are in the middle of the pack in international comparisons. Our country has to move beyond complacency. Thanks to strong leadership from state and local officials nationwide, a powerful movement to dramatically accelerate achievement and attainment in the U.S. is taking hold in districts, schools, and homes across the country.

Looking to best practices, not just in the U.S. but from around the world, has played an important role in guiding federal efforts to advance achievement and invest resources. For the last two years, our Department has gathered education ministers, labor leaders, and educators from around the world to share effective ideas and lessons learned about how to strengthen the teaching profession. I've learned a lot from them. In fact, their input has led our Department to gather insight from teachers nationwide, and directly resulted in our RESPECT project.

It is important to recognize that no two nations are the same. There is no single recipe for creating a high-performing education system that will work across every culture and type of government. But it is also true that there are some consistent, core principles across high-performing countries—college and career-ready academic standards; collaborative partnerships among elementary, secondary, and postsecondary schools and with industry; a rigorous bar to entry for teachers and principals paired with high-quality professional development; and treating teachers and school leaders with respect, as skilled professionals.

For instance, Finland rigorously recruits and reviews only the best candidates for its teaching force. In South Korea, educators are referred to as "nation builders." Singapore's teachers receive a minimum of 100 hours of professional development a year. In general, teachers tend to be more respected, better supported in advancing their work, and better compensated in high-performing countries. We could really use more of that here in the U.S.

When you look at where education has changed over recent years with Race to the Top, our ESEA Flexibility program, and our RESPECT proposal, you see most of the country is moving in those directions. We still have a long way to go to close achievement gaps and before our schools ensure that every child has a world-class education. But I am tremendously hopeful that many of the reforms underway today have the potential to help children excel and our country prosper for decades to come.

When you talk about the future of charter schools, you often say that " " What sorts of industry and government partnerships can lead to more successful coordination between charters and school districts?

When the charter movement began 20 years ago, charter school proponents promised a set of distinctive features: they would perform better than traditional schools, they would be more accountable, they would be cheaper, and the innovations and discoveries along each of these dimensions—quality, accountability, and cost—would transfer back into the traditional public school system.

Thus far, charter schools have only partially delivered on these promises. Charter authorizers have been too slow to close failing charter schools and they haven't done enough yet to

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Thus far, charter schools have only partially delivered on these promises. Charter authorizers have been too slow to close failing charter schools and they haven't done enough yet to share successful practices with traditional public schools. Too many district leaders have seen charters only as competitors. And too many charter school operators have only seen district schools as bureaucrats to avoid. I'm pleased to see that the Gates Foundation recently recognized and awarded several grants to explore project development by district and charter school partners in Boston, Mass., Denver, Colo., Hartford, Conn., New Orleans, La., New York City, Philadelphia, Pa., and Spring Branch, Texas.

Fostering more collaborative partnerships can generate important school innovations that can be leading examples for other states and districts by changing the lives of our neediest children. Government and non-profit leaders should do more to break down barriers between district and charter schools by bringing together leaders from both public school sectors to develop and drive forward policies and practices that benefit all students.

What is the role of government in supporting the next stage of education via ARPA-Ed?

It's a myth that government has no role in America's innovation and technological leadership. In fact, government investment has had a tremendous impact on leadership and economic growth. Since at least 1958, when the Advanced Research Projects Agency was created in response to the launch of Sputnik, the federal government has played an active role in fostering innovation by pursuing revolutionary research and development in areas ranging from defense to medicine to energy. The Internet, GPS, the Human Genome, and many other path-breaking innovations stemming from government research have forever changed their fields—and sometimes, the world. Yet we haven't yet seen that kind of focused, ambitious, revolutionary pursuit in education.

That is why our Department has proposed to work with Congress to create an ARPA-ED program. It will complement our traditional research efforts, push frontiers of learning science and technology that could result in breakthroughs to help raise student performance, and close achievement gaps. In America, education must be the great equalizer. 🕮

Arne Duncan

Photo © House Committee on Education and the Workforce Democrats

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Vouching for the future

How school vouchers improve education

In theory, school vouchers increase competition in the school system, giving all students the opportunity to choose the best learning environment. A look at voucher programs around the world reveals results.

By Harry Anthony Patrinos

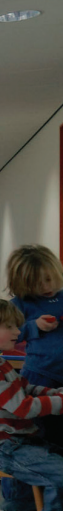
As the demand for education increases, resources remain scarce. In most countries, the government is both the major financier as well as the provider of education. However, schooling still does not reach all members of society equally. One way of financing education is to provide families with the funding via cash transfers to schools based on enrollments, or by providing cash to families to purchase schooling. These are known as vouchers.

The objective of a voucher program is to extend the government's financial support to any education provider and thus give all parents, regardless of income, the opportunity to choose the school that best suits their preferences. School choice via vouchers is often promoted as a means of increasing competition in the school system.

Advocates of the voucher system believe that competition will lead to efficiency gains, as schools—public and private—vie for students and try improving quality while reducing expenses. The idea is that when private schools are encouraged to attract students, they become innovative and thereby bring improvements to the learning process. Likewise, public schools, to attract students and the resources that come with them, seek to improve themselves to provide an education on par with the private schools.

On the other hand, opponents believe that under a voucher system, private providers will be unaccountable to taxpayers and the public. They question claims of efficiency gains. They assert that choice will lead to privatization, less public control of education, and increased segregation.

Photo © atelierPRO



While all these concerns need to be taken into consideration, the decision on how to finance education should be based on evidence.

TARGETED VS UNIVERSAL VOUCHERS

Colombia has a targeted voucher system. The Program for the Expansion of Secondary Education Coverage (PACES) was launched in 1991 to provide the poorest third of the country's population access to secondary education. The program was oversubscribed, so students selected by a lottery were provided with vouchers to attend private schools. Municipal governments provided 20 percent of the funding for PACES; the federal government provided the remainder.

The program, which ran until 1997, covered 125,000 children in 216 municipalities. The unit cost per student for participating private schools was 40 percent lower than for non-participating private schools. The lottery allocation provided researchers with a natural experiment. Findings from the analysis showed that voucher beneficiaries have higher educational attainment. When compared with non-voucher students, voucher students were 6 percent less likely to repeat a grade; they scored 0.2 standard deviations higher on achievement tests and they were 20 percent more likely to take the college entrance exam. They were also less likely to be married and earned more in wages.

Chile's universal voucher program has been active since 1980. Every municipality receives individualized monthly grants based on the number of students attending class in its schools. The municipal authorities also fund student attendance at subsidized private schools, which parents can choose. While test scores are similar in both public and private schools, after controlling for socioeconomic status, unit costs are lower in subsidized private schools.

Research on Chile's voucher program has been subject to a high level of scrutiny. Though there are no randomized trials or rigorous impact evaluations, research results have been varied but trend positive.

The Netherlands is another country which illustrates the effectiveness of vouchers. Seventy percent of the enrollments are in government-financed private schools. On average, these students tend to be from families which belong to a lower socioeconomic class when compared to pupils attending public school, and yet test scores achieved are higher. The level of choice offered, alongside fixed funding from the government per student (with additional funding for disadvantaged students) appears to provide incentives for Dutch schools to keep improving. At the same time, given the need for schools to compete for students by demonstrating success, there's no evidence of grade inflation.

These examples demonstrate that vouchers have the potential to help countries improve their education systems. But they do so within a context that requires more research to understand how they work, if they work, and for whom they work. 🕮

This is an excerpt from "School Vouchers Can Help Improve Education Systems" published on the Opinions section of the World Innovation Summit for Education (WISE) website.

Low fees ***high hopes***

By Michael Latham

SERVICES

Sarva Shiksha Abhiyan *(SSA), India's flagship basic education program for children six to 11 years old, has brought over 60 million additional children into school in the last decade—expansion at a scale and pace unprecedented in any other country. While the physical challenges of access seem to have been largely overcome, data indicates the twin challenges of high dropout rates and low levels of learning have yet to be addressed. Concurrent with the expansion of government schooling has been a dramatic expansion of low fee private schools and an associated migration of students from the state to non-state sector. Gyan Shala, one of these non-state programs, has proven especially effective.*

Photo © Dana Schmidt

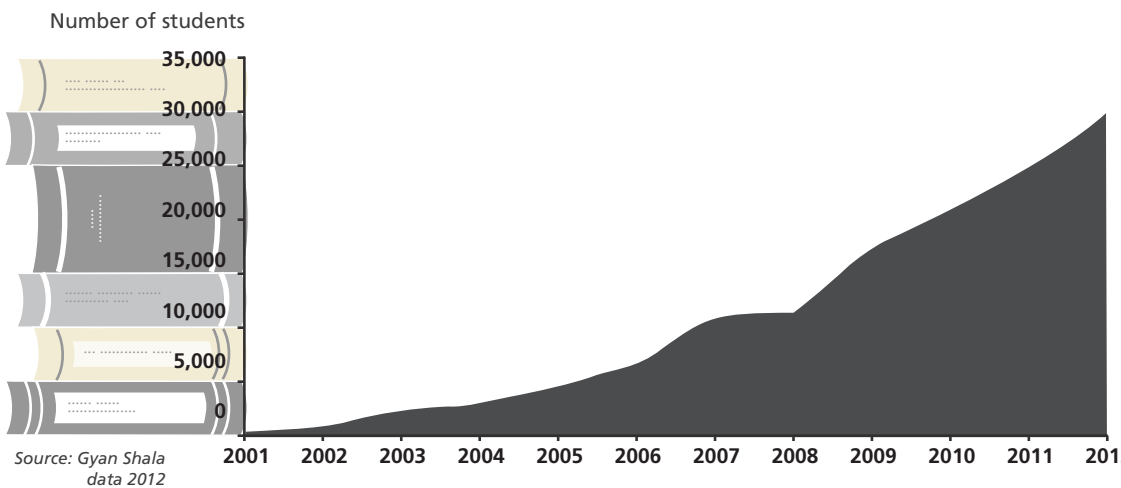
A recent study funded by UKaid from the United Kingdom's Department for International Development has focused attention on India's innovative non-state education program, Gyan Shala, which opened its first school in 2001. Gyan Shala offers low-cost basic education to children from very poor backgrounds in urban slums in the states of Bihar, Gujarat, and West Bengal.

Gyan Shala's one-room schools have provided education to children in the urban slums of Ahmedabad city (Gujarat) since 2002, Patna city (Bihar) since 2008, and Kolkata (West Bengal) since 2011. It has garnered special attention because its quality educational offerings have been verified by a variety of external assessments, including from MIT/Pratham, Education Initiatives, and CfBT Education.

DOING THE NUMBERS

The annual cost for the Gyan Shala program is approximately $50 per student at the elementary level and $95 for the middle level. Both of these costs are lower than the unit cost in government schools for comparable grade levels. The revenue is collected from three sources: government

Gyan Shala program enrollment in Gujarat, Bihar, and West Bengal 2001-2012



Source: Gyan Shala data 2012

funding under SSA, contributions from donors, and user fees of approximately $3 per month.

An assessment of the catchment background of the users of the program in Bihar ascertained that 60 percent of the families are based in a nuclear family setting, with 47 percent having six or more members in the family. Seventy-two percent of the males are daily wage laborers with earnings of $3 per day, and 56 percent of the males and 31 percent of the females were literate. However, only 3 percent and 2 percent of the males and females respectively had progressed beyond secondary education. Interestingly—given the urban slum location—96 percent of the population were permanent settlers in the area and 57 percent owned their home.

FOUR FEATURES

There are four key features to the Gyan Shala model of education design and delivery:

Distributed classes model. A distribution system akin to "ripples in a pond." The design team and the field supervisors ensure that there is standardization of the curriculum across all the centers and minimal, uniform standards of performance in a geographically distributed class set that is located close to the homes of the students and their teachers.

Re-engineered teacher role. Education delivery that is built on elements that are highly standardized, broken down into units, and divided

STUDENT BACKGROUND

Where do Bihar's students come from?

TRADITIONAL NUCLEAR FAMILY

60%

SIX OR MORE FAMILY MEMBERS

47%

$$$

FATHERS WHO ARE DAILY WAGE LABORERS WITH EARNINGS OF $3/DAY

72%

LITERATE FATHERS

56%

LITERATE MOTHERS

31%

into per day lesson plans. This may be delivered within the classroom by less qualified personnel who are in turn supported in an integrated manner by a design and management team that creates curriculum, takes feedback from teachers on this curriculum design on a weekly basis, and teaches classes to train the teachers through demonstration.

This program is effective in reaching over 25,000 children from poor and vulnerable urban and rural families, and is replicable on a mass scale.

Continuous curriculum design adaptation. A design pedagogy in which the design team constantly creates and/or modifies a curriculum that responds to the local context in conformity with state and national curriculum norms, while incorporating elements of curriculum design from the best-in-class global curricula.

Learning development culture. A culture that is structured to support the strategy of using relatively less educated staff (ensuring affordability and low cost) who deliver quality education outcomes through an ongoing support system composed of high-caliber, highly qualified staff elsewhere.

PROMISING FINDINGS

Some common trends emerged from the Gyan Shala program that are particularly noteworthy. Gyan Shala is flexible in incorporating alternatives into its structure; it is demand-driven in the sense that a Shala will be set up only if the community wishes to set up a center. Further, the community is encouraged to suggest suitable candidates from within who could teach in these centers. These "para-teachers" graduate from a customized training program that involves basic content and pedagogy modules, and they are rigorously supported by a senior team providing on-site, continuous follow-up training. Finally, and perhaps most critically, since these para-teachers are selected from within the community and regularly monitored and supported by the central team, they have much more direct accountability to their clients and beneficiaries as well as to their employers.

The overarching results demonstrate that this program has reached over 25,000 children from poor and vulnerable urban and rural families, is replicable on a mass scale, and operates within unit costs that are below or within the existing government budgetary norms. 🕮

CONTINUING CONSIDERATIONS

This study was a preliminary effort to review four overarching questions worthy of further research:

1. Without a subsidy or a possible PPP arrangement, is it possible for a private education provider to deliver quality education based only on fee collection from the lowest socioeconomic quintile?
2. To what extent are very poor parents prepared to choose low-cost schooling over free schooling, even when they have very little disposable income?
3. Without reengineering the mode of delivery, is it possible for the private or public provider to deliver quality education that meets the particular physical and social needs of these clients?
4. To what extent does the regulatory environment impact upon this significant consumer choice for the poor?

Photo © World Bank

Omega Schools Ghana

Private schools for the poor

THE MODEL IN ACTION

An all-inclusive, daily fee payment system with no hidden costs.

A microinsurance policy that ensures every child can complete their schooling.

15

Fifteen free school days per year.

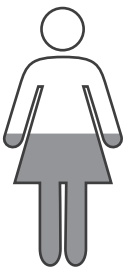
A nutritious hot lunch each day and attention to health issues.

Source: Omega Schools

Omega Schools was founded by Ken and Lisa Donkoh and James Tooley as a social benefit for families in Ghana. It improves the quality of and extends access to education to needy families at the lowest cost.

The Omega Schools chain has grown to 20 schools and 11,000 students in three years, creating a "school-in-a-box" model that is widely replicable.

Within 10 days of opening, a new Omega School is typically at capacity, with 500 students.



Girls make up 52 percent of enrollment in Ghana. All pupils are from the lowest two income quintiles. A partner hardship fund extends access to orphans.

"One father, living in the Kenyan slum of Kibera, summarized it like this: 'If you go to a market and are offered free fruit and vegetables, you know they'll be rotten. If you want fresh produce, you have to pay for it.'"

—James Tooley, "Welcome to easy-Learn, Class 1," *The Times* (U.K.)

SCHOOL'S OUT

BBC Newsnight broadcasts on private schools for the poor.

Bridge International Academies in Kenya

Bridge International Academies operates a franchise-like network of ultra low-cost, for-profit private schools, delivering high-quality education for less than $4 per student per month.

Just two years after the first school opened in January 2009, more than 2,700 students are now enrolled across the Kenyan capital.

The schools were initially built for grades K-3, and have now expanded to K-4.

On average, a bell rings out for the first day of class just five months after Bridge staff identify land for a new school.

Students are at school from 7:30 a.m. to 5 p.m. Monday through Friday, with many also attending a half-day on Saturday.

Source: Bridge International Academies

Photo © Gabe Chmielewski/MaysCommunications

Governments + Business Schools

Partnering to bring prosperity to developing economies

By Page Schindler Buchanan

Government aid, policy reform, and international investment can do wonders for the people in a developing nation, but they can only take an economy so far. A deep pool of talent with management skills and business know-how is critical if a country is going to develop the local businesses, organizations, and agencies that create jobs, provide goods, and deliver services.

Business schools, public and private, are a valuable resource for driving economic growth and improving living standards. As educational institutions dedicated to teaching practical knowledge, critical thinking skills, and leadership, business schools are in a unique position to match experienced individuals with the needs of businesses, society, and government. Partnerships with business schools allow governments to find creative ways to foster economic and social development.

For governments seeking to work with business schools to build a talent pool and create a foundation for economic prosperity, the following tips may be helpful.

one

Engage a local business school to deliver entrepreneurship training to complement government investment in the sector.

This is what business schools know and do every day, and while all entrepreneurs may not need a business degree, they can certainly benefit from practical training and networking opportunities provided by business schools to support their ideas and ambitions. Work with business schools to develop new—or tap into existing—entrepreneurship programs to ensure that your support of the sector is as successful as possible.

two

Use the expertise of business schools to train civil servants and government officials in essential skills such as program management, procurement, negotiation, and budgeting.

Many of the skills necessary in business are extremely relevant in the public sector. Work with business schools to ensure that your staff is performing to the best of their ability.

three

Establish new business schools or training centers in partnership with the private sector, with the guidance of faculty experts from leading business schools around the world.

By partnering with the private sector and management education professionals, you can ensure that new institutions that you establish will produce employable managers and effective leaders to help drive your economy forward.

four

Partner with business schools on research initiatives to explore policy impact, new market-based development approaches, supply chain management, and feasibility studies.

Business school faculties around the globe are always looking for opportunities to do research that will advance their understanding of management and development impact. By working with them you can capitalize on their rigorous methods and expertise, while improving your own systems and policies.

five

Improve the delivery of social services such as health and education by training staff at all levels, from front-line personnel to sector leadership, to better manage resources and people.

It isn't just the top level of management that needs to understand management and business. Outcomes in services can improve immensely when staff is trained in human resources, supply management, budgeting, marketing, and other areas traditionally seen as management territory. 🕮

Photo © Georgina Goodwin/World Bank

Strengthening Small Businesses in Kenya

A Project of the Global Business School Network

When the Kenyan Ministry of Industry realized it needed to improve the success and growth rates of micro, small, and medium enterprises (MSMEs), officials took a long look at what makes these businesses thrive. The answer? Good management. But to make sure entrepreneurs, and the managers they need to hire, get quality training that is applicable to the local Kenyan market, they needed to build the capacity of their country's institutions to deliver management education.

That is where the Global Business School Network (GBSN) got involved. GBSN, a nonprofit organization based in Washington, D.C., helped the government identify three local business schools to establish an initial MSME management training program. GBSN brought in international experts from Columbia Business School (United States), IESE Business School (Spain), and IMD (Switzerland) to mentor Kenyan faculty in developing teaching cases that combined international best practice with local relevance. Through this partnership with business schools, officials trained a cohort of entrepreneurs and managers, and established practical, relevant curriculum and teaching cases for MSME management education that could be delivered throughout the country.

Through this partnership, the government found a sustainable way to address the shortage of management talent in Kenya, while strengthening local institutions at the same time. 🕮

The Global Business School Network (www.gbsnonline.org) is a nonprofit organization that addresses the severe shortage of management talent in the developing world by building management education capacity. Harnessing the power of a diverse international network of leading business schools, GBSN fosters networking, knowledge sharing, and collaboration across borders to advance management education that combines international best practice with local relevance.

21st century
EDUCATION

Photo © Rubberball/istockphoto

INNOVATION

In little over a decade, digital technologies have profoundly changed our lives. They are now starting to do the same for our centuries-old education model, making us question the most basic tenets of learning.

From rural Uruguay to the heart of Cambridge, Massachusetts, educational authorities worldwide are rethinking long-held assumptions about how we learn, which skills we need, and why expanding our access to open education matters.

Technology makes it possible to topple the four walls of the traditional classroom, and in this section, we present innovative initiatives that are doing just that. In Uruguay, the attempt to bridge the digital divide led to providing all public school students with laptops and free Internet access. In North America, innovative schools are experimenting with a new blended approach that creates a learning experience focused on the individual needs of each student. And spanning the globe, new MOOCs (massive open online courses) being embraced by over 35 top universities worldwide allow anyone with an Internet connection to participate in classes once limited to a chosen few. 🕮

EXPENSE
$50 million per year
($100 per child per year)

EQUIPMENT
XO machines from One Laptop Per Child loaded with "Sugar," a Linux-based, open source operating system.

EXECUTION
Plan CEIBAL was publicly funded (including $6 million in financing from the Inter-American Development Bank) and managed by LATU (Laboratorio Tecnológico del Uruguay), a partnership between the public and private sectors. Hardware, software, and services were bid out to private providers.

Access 4 All

Uruguay's Plan CEIBAL is bridging the digital & social equality divide

Source: www.ceibal.edu.uy, www.ceibal.org.uy

Photo © UNDP

Documentary: "Every child a laptop"

Plan CEIBAL: Educational Impact

TEDx Madrid Miguel Brechner (LATU)

In 2007, Uruguay's government made a bold move towards social equality by ensuring access to the Internet for all primary and secondary students and teachers in the country. The first program of its kind in the world, the Plan CEIBAL (*Conectividad Educativa de Informática Básica para el Aprendizaje en Línea*) was launched under leadership of then-president Tabaré Vázquez, who strongly believes digital literacy is essential to make Uruguay competitive in the twenty-first century.

The plan ventured beyond hardware distribution or classroom walls by gifting the laptops to each child and encouraging their use at home and among family members. The plan also included the set up of an Internet portal and a TV channel.

Five years and 580,000 laptops later, the plan resulted in a giant leap in access to technology and equality, its main goal. Prior to CEIBAL, computer access in schools was highly limited—only 14 percent of schools had more than five computers and, in those, students had access to a computer for a mere three hours per month. By contrast, today 100 percent of the students in Uruguay's public schools (85 percent of Uruguay's primary and secondary student population) have their own laptop and 2,300 schools have free Wi-Fi networks.

Furthermore, an independent study published in *El Pais* showed that students participating in the plan achieved the same level of understanding and usage of technology as university graduates, while also visibly enhancing self-esteem and motivation among children from the poorest quintile.

Although one-on-one computing projects in Latin America have not yet demonstrated improvements in learning outcomes, the initial investment in infrastructure has the potential to transform teaching and learning practices in Uruguay. 🕮

In most of the world, the way children are taught hasn't changed much since the introduction of free, compulsory elementary schooling by the King of Prussia in the 1700s. But finally a paradigm shift is emerging in education. New technology-based approaches pioneered by innovative charter schools across the United States have the potential to revolutionize the way learning is conceived.

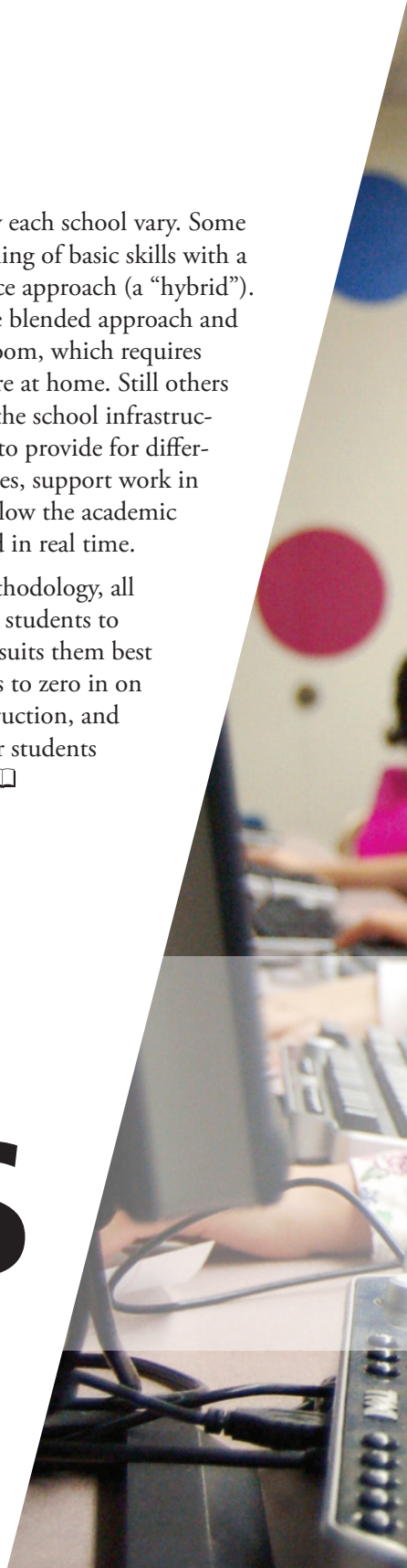
These programs—which include the School of One, DSST Public Schools, and High Tech High—rethink the fundamental tenets of education, from the way children are taught to the way courses are organized and classrooms designed.

Conventional schooling systems were designed to educate the masses in the most economical way possible, using a factory-based model that sorts children by age. These new approaches, however, tailor the program to the needs of each child, thereby shifting the focus from seat-time requirements to actual learning.

The methods used by each school vary. Some combine online learning of basic skills with a traditional face-to-face approach (a "hybrid"). Others follow a more blended approach and even "flip" the classroom, which requires students to learn more at home. Still others completely redesign the school infrastructure and curriculum to provide for different learning modalities, support work in small groups, and follow the academic progress of each child in real time.

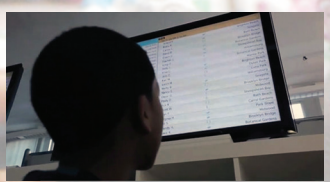
Regardless of the methodology, all these programs allow students to choose the pace that suits them best while freeing teachers to zero in on critical thinking instruction, and provide extra help for students who are struggling. 🕮

BRICKS and CLICKS



Sources: EducationNext, Forbes, and School of One

INNOVATION



School of One

Denver School of Science and Technology (DSST)

High Tech High

Photo © Kentucky Country Day

OPEN EDUCATION GOES THE DISTANCE

Photo © Richard Stamper/istockphoto

The providers

Coursera, founded by two Stanford professors, offers 213 free courses and partners with 33 universities worldwide (coursera.org).

edX, a not-for-profit enterprise of Harvard University and the Massachusetts Institute of Technology, offers 23 courses from six U.S. institutions (edx.org).

Udacity, founded by ex-Stanford professors who believed much of the educational value of their university classes could be offered online. It currently offers 19 courses (udacity.com).

Futurelearn, a new U.K.-based platform affiliated with The Open University, will start offering courses from 12 U.K. institutions in 2013 (futurelearn.com).

TED: The 100,000-student classroom

Open education—programs from educational institutions that allow anyone with an Internet connection to register—debuted in 2012, when top universities from the United States to Scotland and Australia began offering courses online. These interactive offerings (called MOOCs, or massive online open courses), are unprecedented in their reach and technological sophistication. Unlike the distance learning courses of old, these new platforms incorporate streaming video and interactivity with increasingly complex data gathering algorithms that make teaching more effective. Although many elite universities are in the vanguard developing MOOCs, courses are by definition free, presenting many students in poor countries with the opportunity of a top-grade education for the first time. The system allows universities to pool resources by using the lectures as a basis for their own credit-bearing classes, and it could also reduce the costs associated with building and maintaining infrastructure while freeing up teacher time for research and fieldwork.

The classes so far have proved widely popular across the globe. At the end of 2012, Coursera, edX and Udacity together offered around 230 MOOCs from about 40 universities worldwide to over three million students in over 196 different countries. And, not far behind, The Open University in the United Kingdom has launched FutureLearn with 12 U.K. universities. It will start offering free MOOCs in 2013, including a course on "Learning Design for a 21st Century Curriculum." 🕮

Sources: Coursera, edX, FutureLearn, Udacity, and Wikipedia

Grading Teachers

The most reliable way to evaluate teachers is to use a three-pronged approach built on student test scores, classroom observations by multiple reviewers, and teacher evaluations from students themselves, according to a new study from the Bill and Melinda Gates Foundation. The three-year, $45 million research project is the first to demonstrate that it is possible to identify great teaching, the foundation said.

But new teaching theories, tactics, and technologies may render our most basic assumptions useless for the next generation. When *Handshake* approached seven visionaries in education to ask how teachers' success will be evaluated in 2050, more than one questioned the idea that teachers would still head a classroom at all. In the following pages, experts ranging from the U.S. Secretary of Education to the founder of a Washington, D.C. middle school charter grapple with the same question:

"In 2050, what will be the top three criteria for judging a teacher's success?"

Carl Bistany

President
SABIS®

I would be surprised if teachers were used in classrooms by 2050. The way technology is moving, it is likely that learning will be imparted much more through students' use of technology and IT-related tools. Student learning in such an environment would still need to be driven by teachers or some other sort of expert. There would still need to be a means of evaluating results and thereby gauging the effectiveness of the program and means of instruction. **In the end, whether teachers are found in the classroom or not in 2050, just as it is today, the top gauge of success—teacher or technology—needs to be results, results, results.**

Photo © US Embassy London

Arne Duncan

U.S. Secretary of Education

In the last decade, I have talked to literally thousands of teachers and school leaders. I have yet to speak to one who thinks teacher evaluation in America works well today. Ten or twenty years from now is too long for us to wait to do a better job of evaluating instruction in a holistic way. Teachers deserve to be treated like the professionals that they are, and a large part of that is how we assess and support their work. **We also have to remember that the purpose of improving evaluations isn't about judging teachers. It's about creating a system that helps teachers identify when and how instruction is most effective while strengthening areas where it is less effective through meaningful feedback and professional development.**

From our labor management conferences, our Teacher Incentive Fund, and through Race to the Top, we know that there are dozens of great examples on how to do this work better already happening across the country. They involve transforming evaluations to include multiple measures like classroom observation, peer review, student growth, and parent and student feedback often developed together with teachers. We hope states and districts can take this work to the next level through our teacher-led RESPECT project. The fact is, teachers are the most important in-school factor for influencing student achievement. Teacher evaluations should accurately reflect the difference that great teachers make. I'm hopeful that the country will start to see dramatic change in the next few years.

Michelle Rhee

Founder and CEO
StudentsFirst

Now and in the future, the criteria for evaluating educators should vary somewhat depending on the grade and subject taught and school in which a teacher works. **Teacher evaluations should always be based on multiple measures of success. But one very significant component must include the degree to which students are learning and making progress.**

Too often now, teachers are evaluated without objectivity, rigor, or frequency. This makes no sense at all, given the critical role teachers play in kids' lives. I hope as we move toward better evaluations, and more states and districts implement new systems, that they learn from each other, especially with regard to what works best.

Jamil Salmi

Independent tertiary education expert

Teaching and learning will look very different in 2050. We can imagine a single teacher giving a course to more than 100,000 students at the same time, online. We can imagine a robot teaching a small group of students. We can imagine students learning from each other without any teacher involvement. Or we can imagine a student learning on her/his own, guided by an educational software using artificial intelligence…

Are these outlandish dreams? Actually, they are real-life examples of the radical transformation that tertiary education is undergoing today. We are likely to witness drastic changes in the near future under the combined influence of two key factors. First, progress in education technology (online learning, simulation robots, gaming-like software) is opening new avenues for interactive and problem-based learning. Second, tertiary education institutions are faced with the challenge of preparing young people for jobs that do not exist yet. **The traditional approach where teachers impart their knowledge to students in the classroom must be replaced by a dynamic learning model where students acquire generic competencies that prepare them to identify their own learning needs and advance their skills throughout their working life.**

Anant Agarawal

President, edX; Professor, MIT

In 2050, the top three criteria for judging a teacher's success will be quality, scale, and efficiency.

First, the most successful teachers will be the ones who are recognized for high-quality teaching. This is true today, as well. But as the landscape of traditional and online education transforms through enterprises like edX, student satisfaction will become critical. How engaged and excited are students? Did the professor meet the student's goals? For some, their goal might be achieving mastery in a subject. For others it might be rounding out a skill set for employability or upward mobility. **Why will student satisfaction be so crucial to a teacher's success? Because student satisfaction translates into increased chance of student success.**

Second, the most successful teachers will be ones whose reach extends globally to have an economic impact on humanity. Education must and will become more accessible and more affordable worldwide. Teachers who can provide tangible job training, and scoop non-traditional learners (such as low-income, and the impoverished) into the education net, will be the most successful.

Finally, the most successful teachers will be the ones who can reach students efficiently. As quality education extends its reach across the world, the pool of learners will explode. Technology is making this possible, and future advances will allow more reach with fewer resources. This will help decrease education costs as well. How many students can a teacher support while simultaneously decreasing her time commitment?

EdX has a goal to educate 1 billion people worldwide. To do that effectively, teachers will need mechanisms to deliver content efficiently and to respond quickly to students with help and support. For traditional learning, blended courses (courses with an interactive computerized component) will be such a mechanism. Artificial Intelligence is also becoming a greater component of online learning in the edX online learning platform. Who knows? Twenty-five years from now, we may have the perfect intelligent tutor.

Sign up for edX's next free course, starting February 12

The Challenges of Global Poverty: A course for those who are interested in the challenge posed by massive and persistent world poverty, and are hopeful that economists might have something useful to say about this challenge. (Taught by MIT's Abhijit Vinayak Banerjee and Esther Duflo)

Professors Banerjee and Duflo, together with Prof. Sendhil Mullainathan of Harvard University, founded the Abdul Latif Jameel Poverty Action Lab in 2003. In 2011, their book, Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty, *won the Financial Times/Goldman Sachs Business Book of the Year Award.*

V. Darleen Opfer

Director, RAND Education
Distinguished Chair in Education,
RAND Corporation

By 2050, we will be judging teaching success rather than teacher's success. This is an important shift that has already begun to occur. In the last few years, as countries around the world have developed new measures for evaluating teachers, it has become clear that teaching success is variable and not static. It can change depending on the conditions under which teaching occurs, the personal and professional circumstances of the teachers themselves, and with the kinds of supports provided for their teaching.

With this understanding of teaching, we are starting to break the long-held notions of "teaching as art" and "once a good teacher, always a good teacher." **Research is starting to demonstrate that teaching, like all professions, is something that can be learned, continuously improved upon, and is subject to the conditions under which it occurs. This shift in thinking will be an important ingredient for assuring teaching success in the future.**

Such a future would likely see significantly more resources devoted to understanding the elements of teaching success, cultivating it with proper renewal of skills, and ultimately producing students who understand their own learning as dynamic and continuous.

Emily Lawson

Founder and CEO
DC Prep

I actually don't think that the criteria will have changed that much from what's important today, but I hope that the assessments by which the criteria are measured will have become more sophisticated. In addition, **I would hope that teachers will be asked more explicitly to help students develop social skills, as well as to assist in the professional development of their peers and new teachers entering** the field. So the three criteria would be:

- Teacher's impact on students' academic knowledge, as measured by students' academic growth.
- Teacher's impact on students' character skills, as measured by a (to be developed) assessment of students' social/character skills.
- Teacher's impact on the professional growth and success of her colleagues and trainees.

M is for mobile

mLearning dials up new opportunities for education and employment

By Lauren Dawes

Photo © GSMA

Over three billion people around the world already have mobile handsets. Educational organizations are responding to this new reality by developing new and different ways to capitalize on mobile learning and training for formal and informal education.

Mobile learning, or mLearning, is not a new concept, but its popularity is surging as organizations explore new methods of reaching those who are unable to access formal education. For those taking advantage of mLearning, this approach can enrich classroom learning, assist with teacher training, and provide workplace training to students. Best of all, many of these services require technology that's already ubiquitous: basic mobile handsets. Two of the most successful projects are based in Pakistan and Mali.

Pakistan: SMS for Literacy

SMS for Literacy, an initiative launched by telecommunication service provider Mobilink, is a leading example of a successful mobile learning project that helps to equip young women with essential life skills. The project has been designed to improve the basic literacy skills of the learners by sending educational messages in Urdu, the local language. In addition to an improvement in the women's literacy, the initiative also tracked a positive indirect benefit in helping to break down cultural barriers to mobile phone ownership for women—which in turn resulted in a sense of security and increased confidence. The project was launched in partnership with UNESCO and has helped thousands of women increase their literacy and numeracy by up to 60 percent.

Mali: PAJE-Nieta

In Mali, the USAID-funded PAJE-Nieta (Support Project for Young Entrepreneurs) program delivers basic educational skills, such as reading and math, and identifies employment opportunities via mobile phones. Under the project, young people create associations within each village, and the associations then act as a hub for future vocational training and job mentoring. From this hub, participants design community service projects that they carry out locally. The goal is to demonstrate to their neighbors, their family, and their bosses that this program is about more than simply receiving assistance—it's about showing that the youth of Mali will give back as they move forward.

Sustainability

New technologies always usher in challenges alongside promise, and one of the key issues

with mobile learning products and services is sustainability. Discussions around payment, the role of government, and which institutions are key players in the value chain are frequent topics of debate. However, innovative projects have already started to solve the sustainability problem. Some of the most successful are already looking toward an expansion of services, including those in Bangladesh and the Philippines.

Bangladesh: BBC Janala

In Bangladesh, the learning project BBC Janala aims to raise the English language skills of 25 million Bangladeshis by 2017. Since its launch in 2009, BBC Janala has attracted over 8 million users in Bangladesh and received several international awards for its innovative mix of pre-recorded English lessons and quizzes delivered through basic mobile phones.

One of the key issues with mobile learning products and services is sustainability.

Philippines: Text2Teach

In the Philippines, the International Youth Foundation, Nokia, and the United Nations Development Programme combined forces to develop a project to deliver educational video content in classrooms via mobile technology and televisions. Launched in 2003 with Globe Telecom, the Text2Teach program is now in phase three and reached 157 schools in 2011. With an additional 15 schools added to the program in 2012, a total of 557 schools now have access to the technology. Text2Teach has also trained more than 1,600 teachers on the use of the technology in the classroom. The program attributes its success to strong partnerships and community ownership.

From education to employment

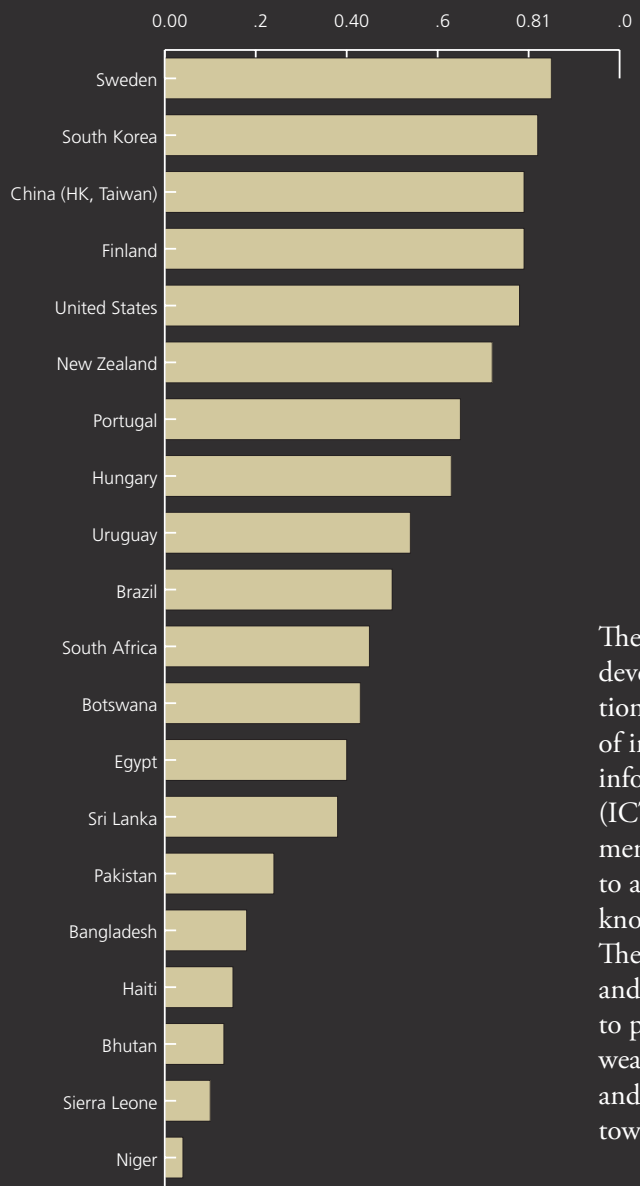
Beyond education, there is vast potential for mobile learning to link to employment opportunities.

One example is the USAID-funded Somali Youth Livelihoods Program (SYLP), which ran from 2008 through 2011 to provide training and job placements for 8,000 young people and delivered core program content through mobile technology. Souktel was supported by lead project implementer EDC Inc. By delivering SMS and audio mobile learning and job information services across the regions of Puntland, South Central Somalia, and Somaliland, end users gained real-time access to key information in communities with low web access and limited local media. The comparison of pre- and post-test outcomes showed a positive and statistically significant change in test scores, for both the attitudinal and knowledge-based questions. Participants also demonstrated some improvement in their understanding of the concept of budgeting to manage finances.

In underserved communities like these, access to life-changing mobile tools and resources are helping to bridge the gap between disillusionment and opportunity. 🕮

DIGITAL ACCESS INDEX

Selected countries, 2002

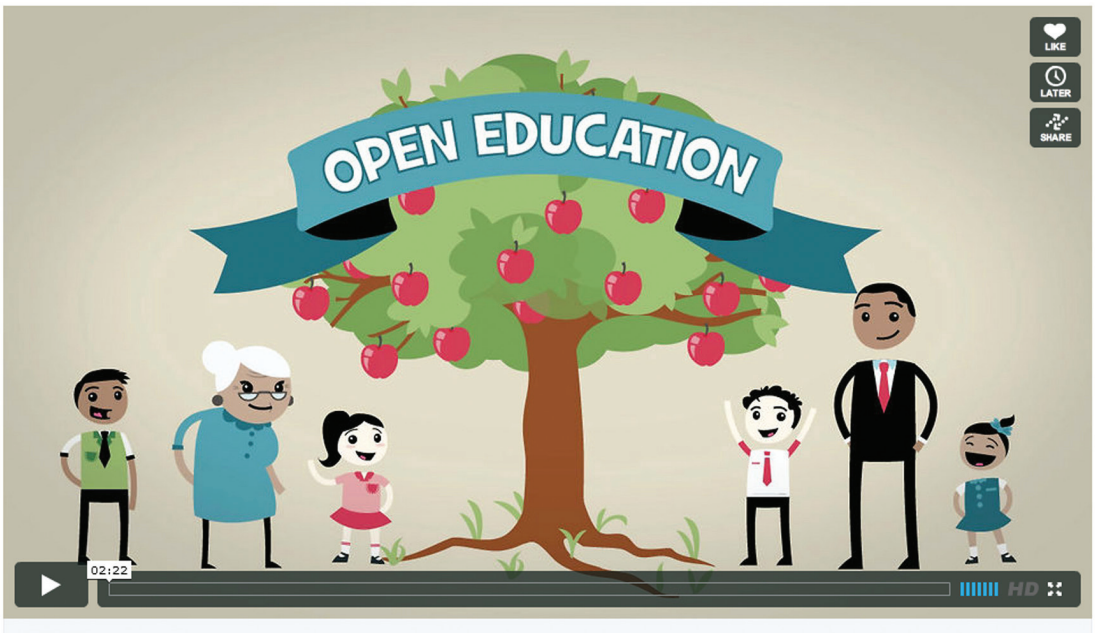


The Digital Access Index (DAI), an index developed by the International Telecommunications Union (ITU), measures the overall ability of individuals in a country to access and use new information and communication technologies (ICTs). The DAI is built around four fundamental vectors that impact a country's ability to access ICTs: infrastructure; affordability; knowledge and quality; and actual usage of ICTs. The DAI has been calculated for 181 economies and allows countries to see how they compare to peers and judge their relative strengths and weaknesses. The DAI also provides a transparent and globally measurable way of tracking progress toward improving access to ICTs.

Source: ITU

Online learning

Why Open Education Matters



First prize winner of the "The Why Open Education Matters" video competition organized by Creative Commons, the U.S. Department of Education, and the Open Society Institute.

200,000
approximate number of undergraduates enrolled in the world's top 20 universities

100,000
approximate number of students enrolled in the first online classes at Coursera, edX and Udacity

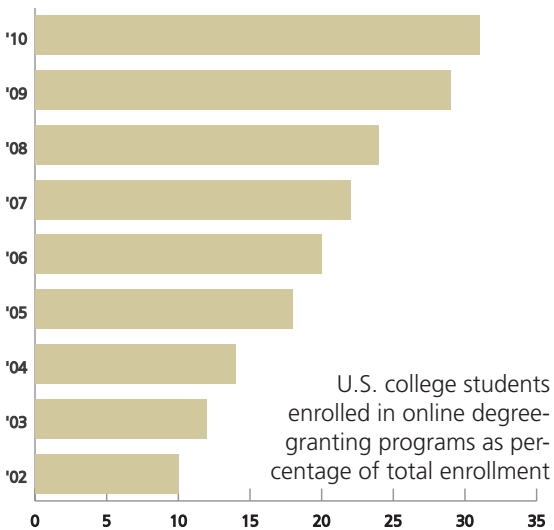
& the MOOCs*

*Massive Open Online Course

Sir Isaac Pitman starts delivering shorthand courses by mail in

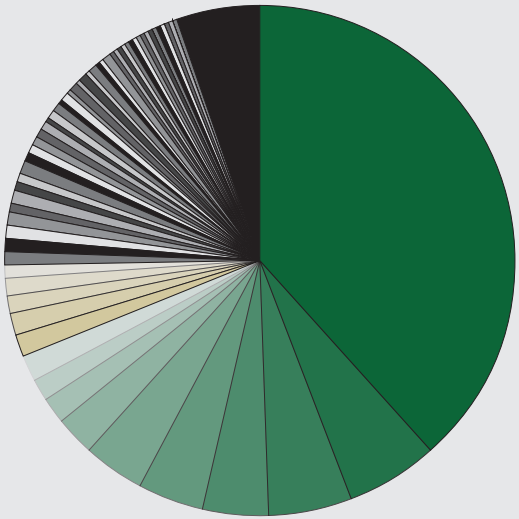
1837

Making the switch



Source: Going the Distance, Online Education in the United States, 2011 Babson Survey Research Group and the College Board

Who enrolls in MOOCs?



1. United States
2. Brazil
3. India
4. China
5. Canada
6. United Kingdom
7. Russia
8. Germany
9. Spain
10. Australia
11. Colombia
12. Ukraine
13. Mexico
14. Thailand
15. Singapore
16. France
17. Malaysia
18. Philippines
19. Italy
20. Netherlands
21. Taiwan
22. Argentina
23. Japan
24. Greece
25. Pakistan
26. Poland
27. Romania
28. South Korea
29. Switzerland
30. Chile
31. Vietnam
32. Turkey
33. Denmark
34. Bulgaria
35. Hong Kong
36. Portugal
37. Israel
38. Venezuela
39. Indonesia
40. Sweden
41. Peru
42. Costa Rica
43. South Africa
44. Hungary
45. Serbia
46. Belgium
47. Czech Republic
48. Iran
49. New Zealand
50. Saudi Arabia
51. Finland
52. Croatia
53. Norway
54. Belarus
55. Ecuador
56. United Arab Emirates
57. Lithuania
58. Austria
59. Bangladesh
60. Latvia
61. Estonia
62. Kazakhstan
63. Dominican Republic
64. Uruguay
65. Others

Source: Coursera, August 2012

FAST FACTS

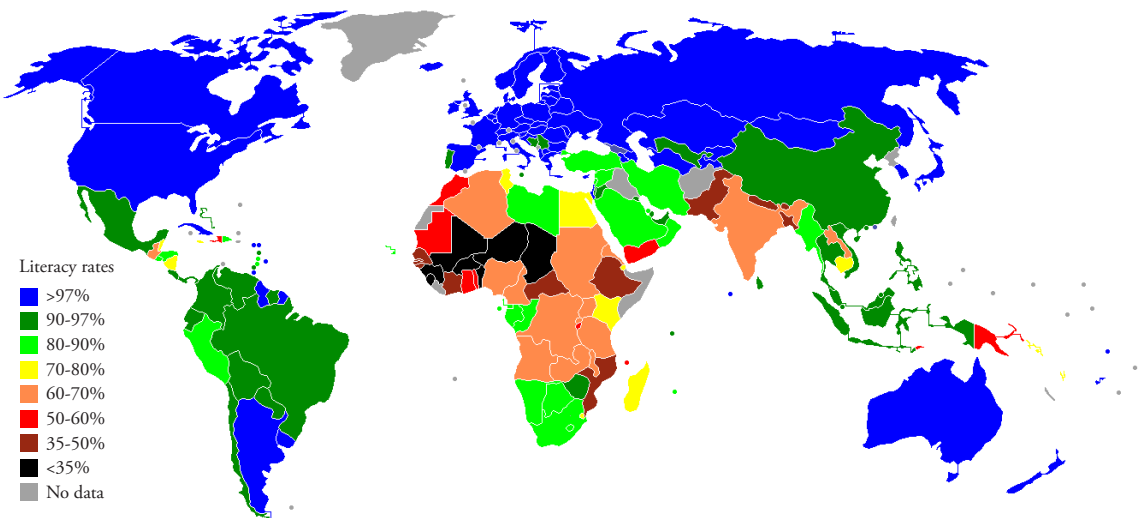
50 top countries in reading, math & science

OECD's PISA education rankings

1. Shanghai, China
2. Hong Kong, China
3. Finland
4. Singapore
5. South Korea
6. Japan
7. Canada
8. New Zealand
9. Chinese Taipei
10. Australia
11. Netherlands
12. Liechtenstein
13. Switzerland
14. Estonia
15. Germany
16. Belgium
17. Macau, China
18. Poland
19. Iceland
20. Norway
21. United Kingdom
22. Denmark
23. Slovenia
24. Ireland
25. France
26. United States
27. Hungary
28. Sweden
29. Czech Rep.
30. Portugal
31. Slovak Rep.
32. Latvia
33. Austria
34. Italy
35. Spain
36. Luxemburg
37. Lithuania
38. Croatia
39. Greece
40. Russian Fed.
41. UAE
42. Israel
43. Turkey
44. Serbia
45. Chile
46. Bulgaria
47. Uruguay
48. Romania
49. Thailand
50. Mexico

Source: PISA's 2009 database, OECD

Worldwide, at least **875 million adults** remain illiterate



Source: UN Human Development Report 2007/2008

“They say that we are better educated than our parents’ generation. What they mean is that we go to school longer. It is not the same thing.”

—Richard Yates

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